Peer Review Lands Safely in Russia

EAST Collaborations WEST

MOSCOW—Ludmila Burakova, chief researcher at Moscow's Institute of Biomedical Problems, doesn't care for the stress of U.S.-style peer review. "It's like passing an exam for each researcher," she says. And she hates the uncertainty: "You work hard and don't know what you get in the end." Although competing for funding is new to them, she and other Russian scientists have learned the system well enough to impress a U.S. delegation that visited recently to monitor a new grants program run jointly by NASA and the Russian Space Agency (RSA).

"There is nothing really off the wall," says Ronald Merrell, chair of Yale University's surgery department and a member of the U.S. delegation. "Some of these experiments are superb, and I strongly expect to see some papers published in the West." Adds Arnauld Nicogossian, acting life and microgravity chief at NASA: "We demanded results, and we treated [the Russian researchers] in the same fashion we treat our own principal investigators."

Since the collapse of Russia's massive scientific enterprise in 1991 as the government crumbled, numerous agencies, societies, and companies have thrown a lifeline to scientific colleagues in the former Soviet Union (FSU) (see main text). Initially little more than subsistence aid, the money is increasingly coming back with strings attached. Most of these programs now demand that FSU researchers collaborate with Western colleagues and follow Western-style peer review rather than the old, hierarchical Soviet approach in which money is passed from ministries through academies and institute heads to researchers. This approach, Western officials say, will improve their chances of carrying out successful collaborations with other nations and raise the quality of Russian science.

Take, for example, the joint NASA-RSA program: This grew out of a U.S. decision in 1995 to pay RSA $400 million for access to the Mir space station in preparation for working aboard the international station, which the United States, Russia, Europe, Japan, and Canada intend to start building later this year. Russian scientists were given $20 million of that pot, over 3 years, with the stipulation that they would have to compete for it through peer review. The competition attracted 274 proposals, and 166—91 in the life sciences and the rest scattered across many disciplines—received funding.

Merrell says the criteria for selection of the winners were the quality of science and whether the experiment was compatible with an upcoming flight opportunity. Once the selection panels made their choices, the panel chairs met to hash out a cross-disciplinary plan that determined the final winners. According to Nicogossian, it was not an easy process. "There was a food fight," he says. He adds that the largest grants—including some for technology development—were for between $500,000 and $600,000, while the minimum was less than $10,000.

Although the selection went quite smoothly, the Russians' unfamiliarity with the process led to some bumps and scrapes along the way. When U.S. scientists complained that some of the proposed salaries for principal investigators seemed excessive, for example, the Russians agreed to adjust those figures. And the Russians found efforts to limit conflicts of interest a peculiar idea. "I even had to walk out of the room when we discussed two similar applications, one of which was made by our institute researchers," recalls Anatoly Grigoryev, a member of the RSA committee and director of the Biomedical Institute.

But the Russian researchers did not find it all smooth sailing. The new approach to funding science is particularly difficult for older scientists, says Burakova, who led the biomedical subcommittee. She cites the long wait and the stiff competition as the major difficulties. "The change [to peer review] is easy for young researchers," she says. "But for the old scientists, it is a painful process to give up the old style."

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A closer look. From left, RSA's Anatoly Grigoryev reviews proposals with NASA's Arnauld Nicogossian, James Collier, and, standing, Yale's Ronald Merrell.

U.S. officials warn, however, that the real lesson is that Russian scientists must fight hard to be competitive not only in Russia but globally. Once Russians embrace the system, "then they will be asked to participate in the review of other research—European, Asian, American, all of us together," says Kathryn Havens, a NASA life and microgravity sciences manager. And Merrell says the incentive to learn quickly should be high: "They have to accrue the skills to go elsewhere [for funding]."

However, it is not clear how much more time the Russian scientists will get. NASA officials say it is unlikely there will be more money forthcoming. Although Alexey Krasnov, RSA's deputy chief of international collaboration, says the agency hopes to pick up some of the slack by financing some basic research, the cash-strapped RSA is already struggling to find money to build key components of the space station.

In the meantime, U.S. and Russian researchers agree that NASA's money has been well spent. "I'm not sure it was perfect," says Roald Sagdeev, a University of Maryland space scientist who was instrumental in lobbying for the grant money. "But at least it was an honest attempt."

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says John Hnatio, manager of the Department of Energy's (DOE's) Initiatives for Proliferation Prevention program. "The threat of these folks going elsewhere is a possibility with very scary consequences," he says.

But U.S. efforts to help applied scientists got off to a slow start. In 1992, Representative George Brown (D–CA) sponsored legislation to establish the CRDF with $25 million of Pentagon money for defense conversion in the FSU. For months, the Pentagon balked at the sum, but eventually it agreed to put up $10 million, so long as the National Science Foundation found matching money from another source. Last year, Soros agreed to donate $5 million after he was personally lobbied by Vice President Al Gore.

Since then, CRDF has been going like gangbusters. The foundation last September announced the winners of its 2-year grants: 257 research teams in 10 FSU countries and their collaborators in the United States. About 23% of grants involve former weapons researchers, but the majority went to scientists outside the military, such as a team at the Institute of Solid State and Semiconductor Physics in Minsk, Belarus, which will get help from Florida Agri-