

NATIONAL ACADEMY OF SCIENCES
COMMITTEE ON INTERNATIONAL SECURITY AND ARMS CONTROL
2101 Constitution Avenue Washington, D.C. 20418

March 18, 1997

Ms. Laura Holgate, Director
Cooperative Threat Reduction
Office of the Secretary of Defense
Room 2D-459
Pentagon
Washington, DC 20301-2600

Dear Laura:

We appreciated the opportunity to report to you and other officials of the Department of Defense (DOD) on March 6, 1997, on the substantial progress we are making in establishing contacts with Russian scientists who participated in the former Soviet biological warfare research program. The six initial projects which we have selected for support at Russian institutes are a significant first step in our program. They are important not only in uniting the scientific capabilities of the two countries but also in demonstrating approaches for improving mutual trust and confidence that pathogens are not being used in ways which do not conform with the provisions of the Biological Weapons Convention.

We are looking forward to our roundtable discussion with colleagues in Moscow in April as another important step in developing the framework for long-term collaboration that we will be submitting to you as part of our report in August 1997. Obtaining the input of Russian colleagues and their support for the long-term program now will help ensure the success of the program in the future.

While our initial projects have some characteristics similar to other projects being supported through the International Science and Technology Center (ISTC) and through other U.S. funding mechanisms, we have emphasized the following important aspects of our cooperative efforts in this field.

- Each of our projects will have one or more of the leading American experts in the relevant field directly involved in monitoring the progress of the project and contributing to its successful conclusion. These specialists will be visiting Russian laboratories in our efforts to improve transparency on a broad front.
- We are initiating a significant number of projects at more than a single Russian institute. Thus, Russian governmental officials as well as leaders of these institutes recognize that their scientific community is developing a broad and important relationship with the

National Academy of Sciences that depends heavily for its continuation on transparency that is developed through direct and open collaboration among specialists.

- As an integral aspect of our current activities, we are mobilizing a community of leading American experts, in science and to some extent in industry, who are committed to assisting Russian colleagues in redirecting their efforts from defense to important civilian applications.

We welcome your interest in our views as to why expansion of the program during the current fiscal year is important, rather than simply waiting to initiate new activities until after submission to you of our recommendations for long-term collaboration later this year. There are several reasons in addition to the importance of addressing urgent public health problems as soon as possible.

- We have stimulated a surprisingly high level of receptivity for cooperation among Russian organizations and facilities which in the past have been difficult to reach. Given the uncertain political scene in Russia, it seems prudent to capitalize on this new Russian interest while the doors are open.

- Experience we gain from experimental projects in additional areas will greatly enhance the development and early implementation of recommendations for a long-term sustained effort.

- By demonstrating that our interest extends well beyond two institutes, we may be able to encourage a significant number of Russian researchers of proliferation concern, who are currently in very difficult economic straits, to concentrate on developing projects for collaboration rather than to leave their institutions and look for new ways to utilize their knowledge of dangerous pathogens.

In short, we are very much in an experimental phase in determining how limited financial resources can be most effectively used in encouraging redirection and transparency. We have shown that with patience and perseverance useful joint projects can be developed, at least at two very important Russian institutes. Most importantly, we have gained a great deal of momentum and credibility within Russia and support within the United States. For the reasons set forth above, we suggest that our activities promptly be expanded to other Russian institutions, and particularly to those institutes and laboratories which have not already developed large portfolios of

international projects, and indeed have been largely hidden from public view.

If decisions on funding future activities are delayed until the fall, there will be a gap of nine to twelve months during which there will be no new project starts. Such a gap in supporting new projects would be a serious setback for some Russian institutes which are interested in working with us. For example, we anticipate that specialists from several Ministry of Defense (MOD) institutes will present project proposals during the NAS-ISTC sponsored workshop in Omutninsk in June. It would be very desirable to begin working with these institutes on specific project ideas immediately following the workshop, to the extent that they are receptive to cooperation. (The tentative agenda for the workshop indicating the involvement of MOD specialists is attached.)

In considering additional project starts during this fiscal year, inclusion of specialists from the MOD in new projects is clearly of high priority. Also, we should seize current opportunities to establish collaborative links with important institutes and laboratories, in addition to the MOD institutes, that have not been active on the international scene. Such institutions include institutes within the Biopreparat complex and anti-plague research laboratories. Finally, new projects which differ from the initial projects in terms of the modalities of cooperation and the types of results that are expected would broaden our base of experience in joint endeavors. By initiating projects which satisfy the foregoing criteria in the near future, our Committee believes that we would be in a better position both to launch an expanded program and to judge the payoff from different approaches over the long term.

Accordingly, we would like you to consider supporting the following new activities during fiscal year 1997:

- (1) A new project at Vector to evaluate a number of glycyrrhizic acid (GA) compounds for antiviral activity against filoviruses (Marburg and Ebola). Some DOD officials have expressed an interest in the possibility of including this project among our initial activities at Vector. While not involving MOD personnel, this project will break new ground in providing insights into Russian capabilities and interests regarding several of the most dangerous pathogens. Also, it should provide the opportunity to leverage investments from the pharmaceutical industry directly in NAS activities. The involvement of U.S. industry in the long-term program seems highly desirable, and this project could provide us with many lessons as to the potential and limitations of such involvement. (A discussion of the merits of the project is attached.) The estimated cost for this project is \$55,000. In addition, we would cover the costs of the American collaborators from our existing contract.

(2) Three or four additional projects at MOD institutes if possible or, if not possible at this time, at Biopreparat institutes where MOD specialists would work on a temporary basis. The criterion for selecting the non-MOD institutes would be the extent of proposed involvement of MOD specialists. We have been informed by the Director of Vector that they are ready to proceed immediately with one joint project with an MOD institute and that if money began to flow to MOD scientists, the reluctant attitude of the MOD leadership in participating in such projects would change quickly. Experience in addressing the on-the-ground issues encountered in working with MOD institutes and/or personnel would provide very useful insights of central importance for realistic long-term planning. The estimated cost of initial projects in this area is \$250,000 plus \$50,000 for the American collaborators, for a total cost of \$300,000.

(3) A survey of capabilities of Russian institutions which are known to have participated in BW-related activities, but which have not been significantly involved in international activities, coupled with the commissioning of pilot projects at several of the most important institutions. Candidate institutions include (a) Joint Stock Company Omutninsk Scientific Experimental and Industrial Base which will probably be the host for the June workshop, (b) Joint Stock Company Biochimash which has approached ISTC for possible support, (c) Volgograd Anti-Plague Research Institute which will probably be represented at the June workshop, (d) Stavropol Anti-plague Research Institute which will probably be represented at the June workshop, (e) State Research Institute of Biological Instrument Making which, at least during 1996, received MOD funding for biological defense research, and (f) the Berdsk biotechnology plant which appears to be ready to enter into joint projects with Vector. Such visits would be an important aspect of our efforts to develop a long-term program which does not exclude any important Russian facilities. At the same time, an NAS presence at such institutions--even during survey visits--could be important in retaining important personnel who might otherwise lose hope as to future funding and leave for the commercial sector, and perhaps dangerous pursuits. The estimated cost of the visits and five pilot projects is \$400,000.

(4) A joint U.S.-Russian assessment and associated feasibility study of the establishment and operation of expanded electronic communications capabilities at about a dozen research institutes of MOD and Biopreparat, with particular attention to strengthened capabilities for communications with Russian civilian institutes and for access to the Internet. We recognize that improved communications capabilities might enhance Russian capabilities to coordinate their military-related activities and improve their access to western data on dual-use technologies. But our preliminary view, which will be examined during the assessment, is that the positive aspects of the contributions toward

transparency will outweigh such concerns. One specific proposal from Vector is to install a satellite dish and also to expand land lines to the research community in the Novosibirsk area at an estimated cost of \$200,000. This suggestion along with other plans will be considered in the feasibility study. Electronic communications will probably be an important aspect of the long-term plan. Therefore, we should understand the technical issues and the cost constraints as soon as possible. We estimate the cost of this assessment and feasibility study, which would examine the requirements at each facility in detail, as well as the dual-use implications, to be on the order of \$150,000, with completion within twelve months.

(5) Two technical workshops in Russia on topics of considerable interest to scientists from the MOD and Biopreparat. They would logically follow the workshop in Omutninsk but would be more focused. Candidate topics suggested by our Russian colleagues are molecular epidemiology, diagnostics, treatment, vaccine development for viral and bacterial infections, application of entomophagenic viruses and bacteria for plant protection against insects. While these topics require considerable refinement, they provide a good point of departure for identifying areas of mutual interest. ISTC-sponsored workshops in Russia have shown that they are an effective means of attracting previously unknown scientists to the table of international cooperation. The estimated cost is a total of \$150,000 which includes workshop proceedings.


(6) One workshop in the United States to discuss the following topics which are important aspects of redirection of biological research activities over the long term: registration of high hazard laboratories, maintenance and control of data banks of strains of pathogens, and procedures for controlling the movement of pathogens within a country and among countries. Cooperation in all of these areas is an important aspect of transparency and confidence building, and a workshop in the United States would be designed to make Russian colleagues more comfortable in addressing these topics forthrightly and constructively. This workshop would help structure a realistic approach to joint efforts in these fields. The cost of the workshop, together with carefully structured visits by the Russian visitors to selected U.S. facilities, is estimated at \$75,000.

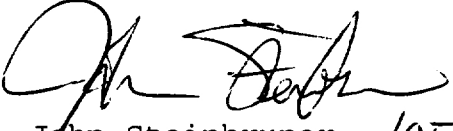
(7) Increased administrative capabilities to support the development and implementation of the foregoing activities. We estimate that the additional staff, travel, and other costs to be incurred by NAS in carrying out activities beyond those envisaged in the original contract would be on the order of 15-20 percent of the project costs, although this percentage will vary considerably depending on the type of activity.

We greatly appreciate your interest in our views concerning

expansion of our current efforts. We look forward to receiving your reaction to these suggestions. If you are prepared to support some or all of these suggestions, we will of course send you a formal proposal with additional information, including an appropriate budget.

Sincerely,


Joshua Lederberg ICFI
Committee Chair


John Steinbruner ICFI
Committee Vice-Chair

Attachments:

Tentative agenda for NAS-ISTC workshop in Omutninsk
Discussion of proposed Ebola/Marburg project at Vector

cc: Roland Lajoie, CTR
Joan Demey, DSWA
Doug Denning, NRC/OCG