Review of Research Proposals for Cooperation with Former Soviet Biological Weapons Personnel and Institutes: Letter Report from 2000-2004 Reviews

Committee on the Review of Research Proposals for Cooperation with Former Soviet Biological Weapons Personnel and Institutes

Development, Security, and Cooperation

Policy and Global Affairs

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July 29, 2005

Gavin Braunstein, Ph.D.
Project Manager, Biological Weapons Proliferation Prevention
Defense Threat Reduction Agency
U.S. Department of Defense
John Kingman Drive, MSC 6201
Fort Belvoir, VA 22060-6201

Dear Dr. Braunstein:

On behalf of the National Research Council's Committee on the Review of Research Proposals for Cooperation with Former Soviet Biological Weapons Personnel and Institutes, I am pleased to transmit a summary of the committee's reviews during 2000-2004. These reviews were in accordance with Contracts No. DTRA01-99-0039 and DTRA01-02-D-003 between the National Academies and the U.S. Department of Defense.

During 2000-2004, the committee met in person ten times to evaluate proposals, participate in site visits, and conduct other business:

May 12, 2000	December 2, 2002
November 27, 2000	May 5, 2003
May 4, 2001	November 13, 2003
December 11, 2001	July 12, 2004
May 9, 2002	December 13, 2004

Committee meetings provided a forum for the members to clarify their understanding of individual proposals and agree on their evaluation of each proposal.

The committee reviewed 178 proposals during these five years, using the following criteria:

- Scientific importance of the topic;
- Quality of the proposal;
- Quality and capacity of the principal investigator, research team, and facilities;
- Provision for strong U.S. collaboration;
- Engagement of former Soviet biological weapon expertise;
- Promotion of transparency; and
- Sustainability of the research following completion of the project.

Based on their examination of the proposals, information from site visits, and thorough discussion at the meeting, they placed each proposal in one of the following four categories:

1) Recommended for funding;
2) Recommended for further development and resubmission;
3) Not recommended for funding; and
4) Recommended for referral to another federal agency.

A complete list of the proposals reviewed and a summary of the recommendations from each meeting are contained in Attachment 1. A detailed description of the proposal review process for 2000-2004 is provided in Attachment 2.

In developing these recommendations, committee members drew on their extensive expertise in biological weapons research and its peaceful applications, along with years of experience with biological weapons institutes in the Former Soviet Union. They also used their familiarity with a wide range of U.S. bioscientists to identify potential collaborators. A list of committee members is contained in Attachment 3.

We are pleased to have provided these assessments to DTRA over the past five years and look forward to continuing that assistance under the current contract.

Sincerely,

David Franz, *Chair*
Committee on the Review of
Research Proposals for Cooperation with
Former Soviet Biological Weapons
Personnel and Institutes

Attachment 1

List of Proposals and Summary of Recommendations by Meeting Date

May 12, 2000

The committee reviewed 34 proposals. Of the 34 proposals, 8 were recommended for funding; 6 were recommended for further development; 7 were not recommended for funding; 12 were recommended to be forwarded to another agency; and 1 was recommended for further development and forwarded to another agency.

1. Antibodies from combinatorial library to Marburg virus
2. Atypical *Bacillus anthracis* strains as the causative agent of anthrax
3. Biological properties of defective forms of retroviruses
4. Botulism vaccines and treatments
5. A collection of plague, cholera, anthrax, brucellosis, and tularemia bacteria isolated in the foci of the Caucasus, its preservation, and development
6. Design of an experimental aerosol DNA-vaccine preparation against hantaviral infection
7. Development of edible vaccines using transgenic plants
8. Development of highly sensitive and specific diagnostic test systems of a new generation for microbiological monitoring
9. Development of human tuberculosis therapy schemes using recombinant cytokine preparations
10. Developing the industrial technology for producing the bioactive component “Biobacton” by means of spray-drying
11. Development and introduction of new preparations and methods for diagnosis and treatment of brucellosis
12. Development of targeted anti-cancer recombinant preparations
13. Development of the vaccine strain for living pertussis vaccine
14. *Francisella tularensis* genetics group: anti-tuleremia vaccine
15. Genetic engineering preparations on the base of p53 protein for cancer therapy
16. Hyaluronic acid – isolation, purification, analysis and development of new drug forms
17. Immunomodulators for combined chemo-immunotherapy of tuberculosis
18. Improvements in functional potentialities and organizational structure of special anti-epidemic teams for work in emergency situations.
19. The integrase of *B. pertussis*: characterization of the DNA binding sites for the integrase and the site of specific recombination
20. Investigation of cellular and humoral immunities induced by chemical and live anthrax vaccines
21. Laboratory of mycoplasmas and L-forms of bacteria
22. Laboratory of rickettsial ecology
23. Laboratory of tuleremia
24. Modifying enzymes as molecular determinants of bacterium-host cell interactions
25. Organization of microbial and cell culture collections to support investigations of infectious diseases in humans
26. The role of gram-negative bacteria endotoxins in artherogenesis

27. Screening for new targets: design of new antimicrobial compounds
28. Sequencing and detection of pathogenic variants of ECHO 11 and 19 enteroviruses
29. Super high resolution method
30. The structure of ecological systems in plague natural foci and plague epidemicity factors in the North Caucasus
31. Studies of poxvirus replication in primary macrophage cultures
32. Studies on the genetic and serological diversity of tick-borne encephalitis viruses with West and East Siberia distribution
33. Testing of biochip device for rapid tuberculosis diagnostics
34. Using combinatorial libraries to determine virulence factors of Ebola virus

November 27, 2000

The committee reviewed 25 proposals, of which 10 were recommended for funding; 4 were recommended for further development; one was not recommended for funding; and 10 were recommended to be forwarded to another agency.

1. Anthrax in Kazakhstan
2. Biochemical production facility to process wood wastes into ethyl alcohol, carbonic acid, furfural, and high-quality organic fertilizer.
3. Biotechnological production of natural plant raw material in cell culture
4. Combinatorial antibody libraries to orthopox viruses
5. Conservation of genetic material and study of genomic structure of different Variola virus strains
6. Construction of recombinant plasmids coding synthesis of pathogenic microorganism protective antigens and study of their properties
7. Conversion of vegetable raw material containing cellulose into a versatile carbohydrate-substrate complex
8. Development of fundamentally new technology and equipment for the processing of plant raw material
9. Development of monoclonal and recombinant antibodies for therapy and diagnostics of Variola virus and other orthopox viruses with human pathogenicity
10. Development of rabies control system in wild carnivora, stray dogs, and cats in Russia
11. Development of a reference-preparation of Variola virus antigens.
12. Development of up-to-date kits for detecting specific antibodies, antigens, and nucleic acids of human pathogenic orthopox viruses in clinical samples
13. The GG-2000 milking apparatus project
14. Investigation of pH6 antigen role in live plague vaccine immune-genesis
15. Investigations of cellular and humoral immunities induced by chemical and live anthrax vaccines ISTC #1898
16. Modifying enzymes as molecular determinants of bacterium-host cell interactions
17. Production of food protein – Sodium Casenate in one-piece units
18. The production of medical immunobiological preparations to be used against infectious disease
19. Rational use of genetic resources of a wild nature

20. Search for antivirals for treating and prevention of orthopox viral infections including smallpox
21. Search for functional imitators of antigenic determinants of Marburg virus using phage peptide libraries
22. Setting up the commercial production of human marrow and blood cell cryopreservatives
23. Setting up non-waste production of the SGOL biologically active supplement using milk industry waste (whey)
24. Studies of smallpox pathogenesis and the possibilities of modeling this infection in rodents and monkeys
25. Study of the genetic and serologic diversity of hantaviruses in the Asian part of Russia.

May 4, 2001

The committee met and reviewed 30 proposals. Of those proposals, 2 were recommended for funding; 16 were recommended for further development; 8 were not recommended for funding; and 4 were recommended to be forwarded to other agencies. The proposals are:

1. Analysis of the biochemical, pathogenic, genetic, protective properties of the attenuated wild low virulent strain *Francisella tularensis mediaasiatica* KA-29
2. Biocontrol of parasitic nematodes by predatory fungi and their metabolites
3. Comparative immunological study of the live brucellosis candidate vaccines
4. Developing medical immunobiological preparation (MIBP) of a new generation, designed for emergency prevention and treatment of anthrax, anthrax immune gamma-globulin for intravenous administration to humans
5. Development of applied program package for optimization of technology of aerosol application of preparations for plant protection
6. Development of edible vaccines using transgenic plants
7. Development of information and communication system for control and monitoring under experimental animals
8. Development of integrated system for support of decision-making in the situations connected with emissions of harmful aerosol and gas pollutants into atmosphere from natural and anthropogenic sources
9. Development of rabies control system in wild carnivora, stray dogs and cats in the Russian Federation
10. Development of a selective sampler of aerosols
11. Ecological and socio-economic factors of activity anthrax foci and improvement of its diagnosis and prophylaxis in Kazakhstan. Revision of K-570
12. The elaboration of the methods of predicting human's susceptibility and efficacy of protective preparations under the conditions of viral aerogenic infection
13. Elaboration of the method for predicting the protective level of vaccines that stimulate antibody formation
14. Epizootological and epidemiological mapping and monitoring of natural nidi of plague in the Uzbekistani part of the basin of the Aral Sea, development of measures of long-term prognosis and prophylaxis of epidemic situations.
15. The elaboration of preparations for express diagnosis and for urgent prophylaxis of arboviral infections

16. The elaboration of technology for synthesis of N-vinylpirrolidone/vinylpiridine copolymers and producing new biologically active substances having immunostimulating properties on their basis
17. Epidemiological monitoring of morbilliviruses circulation in a population of wild and domestic animals and man
18. Identification of chromosomal translocations in major leukemias by hybridization with oligonucleotide microarrays
19. Identification and functional analysis of the human cellular genes obligatory for viral infection
20. Investigation of deposition, retention and removal of viral aerosols from the respiratory tract of laboratory animals
21. Investigation of a molecular and genetic variety strain of a rabies virus circulating in the south of Western Siberia
22. The investigation of virus inactivation in human plasma or its derivatives by high hydrostatic pressure in steady-state and dynamic regimes
23. Magnetometric immunosensor for multi-pathogen continuous monitoring
24. Search of the ways to increase the efficiency of aerosol preparations based on Siberian silver fir polyprenols
25. Study of biological activity of peptides towards melatonine receptors using tritium-high labeled preparations
26. The study of pathophysiological and molecular-biological differences between natural and laboratory variants of Ebola virus.
27. Study of space- and time-dependent variations of biogenic atmospheric aerosols in Western Siberia, evaluation of possible sources and influence on the health of region's population
28. The study of Vilyui encephalomyelitis: identification of the etiologic agent; peculiarities of epidemiology and prophylaxis.
29. Studying the dependence of viral virulence on the energy of virus-cell interaction
30. Synthesis of new hybrid molecules based on derivatives of rifamyeim and fluoroquinolones and study of different molecules substitutes' effects on multiple resistant mycobacteria

December 11, 2001

The committee reviewed 23 proposals and recommended 6 proposals for funding and 5 proposals for further development. In addition, 7 proposals were forwarded to another agency and 5 proposals were not recommended for funding. The proposals are:

1. Analysis of the biochemical, pathogenic, genetic, protective properties of the strains *Francisella tularensis mediaasiatca*
2. Comparative molecular-genetic and immunochemical characterization of *Brucella* vaccine strains
3. Comparative studies of immunobiological characteristics of live brucellosis vaccines
4. Development of erythrocyte diagnosticums for serological diagnosis by indirect hemagglutination test of chlamydiosis of animals, fur animals, and poultry

5. Development of immunochemical test systems based on monoclonal antibodies to diagnose rabies
6. Development of oligonucleotide microchips for diagnostic of human-pathogenic orthopoxviruses
7. Development of recombinant antirabies vaccine to immunize wild carnivorous animals
8. Development of recombinant drugs selectively inactivated prostrate cancer cells
9. Development of the technology for production of monoclonal antibodies to glycoprotein B(GB) and E(GE) to differentiate vaccine and epizootic Aujeszky's disease (pseudorabies) and classic swine rinderpest strains in immunoenzyme test system
10. Development of a viral diagnostic center in Tashkent, Uzbekistan
11. Ecological and socio-economic factors of anthrax foci activity and improvement of its diagnosis and prophylaxis in Kazakstan
12. Epizootological and epidemiological mapping and monitoring of natural nidi of plague, tularemia, anthrax and *Brucella* in selected regions of Uzbekistan
13. Experimental aerogenic infection of cattle by *Mycobacterium bovis* virulent strain to study the mechanism of aerogenic transmission of infection
14. *H. pylori* research
15. Molecular-genetic and immunochemical analyses of epizootic and altered strains of the agents of anthropozoonosis
16. Production and introduction of immuno-enzyme test systems for diagnosis and indication of glanders, melioidosis, anthrax, infectious rhinotracheitis, classic rinderpest, and Aujeszky's disease
17. Production of polymer-subunit inactivated vaccines of a new generation for classic rinderpest of swine and Aujeszky's disease
18. Proposal to elucidate the molecular and cellular mechanisms of immunogenesis induced by standard anthrax vaccines to provide the basis for the construction of molecular vaccines
19. Proposal to elucidate the role of pH6 antigens at the initial stages of the infectious process induced by the cells of live plague vaccines
20. Proposals of Military Medical Academy
21. Prothymosin-a: biological properties, usage in experiment and clinic for activation of immunity, reparation, and adaptation process
22. Recombinant antibrucellosis vaccine development using bacterial *Salmonella* vector producing *Brucella* protective antigens
23. A vaccine candidate Nik *F. tularensis* against the tularemia pathogen

May 9, 2002

The committee reviewed one proposal, which was recommended for funding in subsequent consultations. The proposal title was

Comparative studies of immunobiological characteristics of live brucellosis vaccines

December 2, 2002

The committee reviewed 28 proposals and recommended 6 proposals for funding and 14 proposals for further development. Seven proposals were not recommended for funding and one was recommended to be forwarded to another agency. The proposals are:

1. Applied program package for modeling of indoor microclimate and diffusion of gas and aerosol admixtures within living and production rooms
2. Atlas of bacterial and virus zoonotic infections distribution in Kazakhstan
3. Comparative analysis of *Francisella tularensis* antigens of different biovars
4. Development of software for determination of contamination areas near and inwardly of civil and industrial buildings from external and internal aerosol and gas admixtures sources
5. Development of software for determination of parameters of atmospheric admixtures aerosol and gas hiding sources on the base of monitoring data and for determination of contamination area parameters
6. Development of subtractive hybridization for species-specific identification of *Burkholderia pseudomallei*
7. Study of pathophysiological and molecular-biological differences between natural and laboratory variants of Ebola virus
8. Genomic, pharmacological and therapeutic studies of bacteriophages infecting select agent bacteria
9. Inactivated vaccines based on nanoemulsions
10. Lymphotropic strain of *Acanthamoeba*: interactions of amoeba and human cells *in vitro* and consequences of amoeba penetration into a thymus
11. Molecular-genetic investigation of regulation mechanisms for *pen*- and *hly*-gene expression in bacteria of *Bacillus cereus* group
12. Organization of SPF laboratory animal breeding vivarium at the facilities of SRC VB Vector and its feasibility study
13. Potent vaccines for the next generation of biological warfare agent countermeasures, St. Petersburg Nuclear Physics Institute
14. Production of humanized monoclonal antibodies against the components of *Bacillus anthracis* exotoxin for the urgent prophylaxis and therapy of anthrax in a group of population subjected to a terrorist attack
15. Production of humanized monoclonal antibodies against the F1 and V antigens of *Yersinia pestis* for the urgent prophylaxis and therapy of plague in a group of population subjected to a terrorist attack
16. Reconstruction of insectarium of Aikimbayev's Kazakh Scientific Center for Quarantine and Zoonotic Diseases (KSCQZD) for maintenance of optimum conditions at reproduction and maintenance in necessary quantities of laboratory and natural populations of fleas and ticks from natural foci of plague of Central Asia and Kazakhstan
17. Regional center for training of specialists on quarantine and dangerous zoonotic infections for Central Asia and the Caucasus
18. Safety of storage and the account of originators of quarantine and especially dangerous infections in museums of Anti-Plague Service of Republic of Kazakhstan
19. Search of new highly immunogenic anti-tularemia vaccine strain from *Francisella tularensis mediaasiatica* subspecies

20. Specific modulation of the apoptosome complex formation in cancer cells by human alpha-fetoprotein and its derivatives: application for targeting anticancer therapy
21. Studies on *Francisella tularensis* strain Nik as a potential tularemia vaccine
22. Study of apoptosis mechanisms induced by bacterial and viral toxins and superantigens: approach for AIDS therapy by using targeting apoptosis modulators
23. Study of roles of pH6 antigen in promoting virulence and immunity in *Yersiniae*
24. Study on structural-functional properties of proteins providing specific adhesion of *Yersinia pestis* with the host cells and development of approaches to their use to prevent plague
25. Study on the structure and conformational properties of molecular periplasmatic chaperone Caf1M and V-antigen of *Yersinia pestis* in crystal and solution as a way for construction of antibacterial drugs of a new generation
26. Studying of a role of pH6 antigen in pathogenesis of pneumonic plague as a target for diagnostics, vaccine and drug design
27. Studying the role of *Yersinia pestis* lipopolysaccharides structural organization in the development of immune preparation
28. Use of bacteriophages and phage lytic enzymes as a novel treatment for glanders

May 5, 2003

The committee reviewed 22 proposals and recommended 3 proposals for funding and 8 proposals for further development. In addition, 7 proposals were not recommended for funding, and 4 proposals were forwarded to another agency. The proposals are:

1. Anthrax in Georgia: molecular biology, searching alternative ways of treatment
2. On the demand for coniferous vitamin concentrates
3. Development and assessment of efficacy of biological defense filters with antiviral effects on the base of impregnated zeolites
4. Development of fast diagnostic device for warfare pathogenic bacteria in water and air
5. Development of food additives, pharmaceutical and cosmetic drugs with antiviral and immunopotentiation action on the basis of coniferous needle extract
6. Development of method of liquid radioactive waste treatment with the use of micellary enhanced ultrafiltration
7. The development of recombinant human cytochrome P450 systems for the assessment of anti-viral drug metabolism
8. Development of a small-scale portable ion mobility spectrometric system for real time detection of *Bacillus anthracis* spores
9. Effective routes for enhancement of host resistance against infections
10. Harmful effect of anthropogenic factors-mixtures of heavy metals with connections of sulfur on health of a man
11. Investigation of the activity of cattle colostrum-derived secretory IgA preparations in the treatment and prevention of smallpox infections
12. Mutant phage library technology for rapid diagnostics of pathogenic *S. aureus* strains
13. A novel approach to gene delivery systems characterization by binding constant and envelope resistance

14. A novel approach to viral strains characterization basing on aqueous two-phase partitioning technology
15. Research of a molecular role of an intestine microflora in pathogeny of purulent-inflammatory disease
16. Search for functional imitators of antigenic determinants of Marburg virus using phage peptide libraries
17. Study of prion proteins using relevant aptamers, obtained by SELEX, aimed to develop new approaches in diagnostics and therapy of prion-mediated diseases
18. Study of roles of pH6 antigen in promoting virulence and immunity in *Yersiniae*
19. Study on the structure and conformational properties of molecular periplasmatic chaperone Caf1M and V-antigen of *Yersinia pestis* in crystal and solution as a way for construction of antibacterial drugs of a new generation
20. Study on structural-functional properties of proteins providing specific adhesion of *Yersinia pestis* with the host cells and development of approaches to their use to prevent plague
21. Toxicological estimation of products derived from gossypol-free seeds of cotton
22. The toxicological estimation of residual quantity of pesticides (herbicide, depholiant and growth-regulators) in products of processing grain and technical crops

November 13, 2003

The committee reviewed 8 proposals, of which 1 was recommended for funding, 2 were recommended for further development, 3 were not recommended for funding, and 2 were forwarded to other agencies. The proposals considered are:

1. Applied program package for modeling of indoor microclimate and diffusion of gas and aerosol admixtures within living and production rooms
2. Development of candidate DNA vaccines against orthopoxviruses pathogenic for humans
3. Development of the methods for the inverse problem solution of the gas and aerosol pollutant distribution in the atmosphere under the complex urban conditions
4. Development of specific antiorthopoxviral drugs on the basis of small interfering RNAs (siRNAs)
5. Species-specific molecular colony diagnostics: assay of orthopoxviral nucleic acids by In-Gel PCR
6. Studies of intraspecies variability of monkeypox virus genome
7. Studies of the role of IFGP6, a newly defined human CD8 T cell receptor, in T cell differentiation and hepatitis B virus infection
8. Study of space- and time-dependent variations of biogenic atmospheric aerosols in Western Siberia, evaluation of possible sources and influence on the health of the region's population

July 12, 2004

The committee reviewed 3 proposals and recommended 2 for funding. They were informed that the third had already been funded by another government agency. The proposals are:

1. Creation and preservation of the genofond of Russian population of phytopathogenic bacteria
2. Ecology, genetic clustering, and virulence of *Yersinia pestis* strains isolated from natural foci of plague in Georgia
3. Study of the interleukin-1 protective role in the anti-infectious resistance

December 13, 2004

The committee reviewed 4 proposals and recommended 2 for funding. They recommended that the remaining 2 not be funded. The proposals are:

1. Development of methods to construct recombinant prophylactic means for sheep pox with use of transgenic plants
2. Ecology of *Brucella* biotypes within southern Kazakhstan
3. Epidemiology of Crimean-Congo hemorrhagic fever and hemorrhagic fever with renal syndrome in the Republic of Kazakhstan
4. Epidemiological surveillance of human and animal brucellosis in the Republic of Uzbekistan

Attachment 2

Proposal Review Process for 2000-2004

Background

The Defense Threat Reduction Agency (DTRA), under the Department of Defense (DoD) Cooperative Threat Reduction (CTR) Program, established the Collaborative Research (CR) project to facilitate cooperation on biological research between the United States and the former Soviet Union. The purpose of this project is to prevent the proliferation of former Soviet Union biological weapons scientific expertise and technology by expanding scientific cooperation and exchange in peaceful applications of the biological sciences between American research scientists and Russian research scientists who had participated in the biological weapons program of the former Soviet Union.

Since April 1999, the National Research Council (NRC) has assisted DTRA by providing a system of peer reviews for all former Soviet Union-proposed research projects being submitted to the CTR/CR project for funding. These reviews are conducted by the Committee on the Review of Research Proposals for Cooperation with Former Soviet Biological Weapons Personnel and Institutes. The committee's primary task is to evaluate proposals prepared by Russian researchers for scientific validity, based on established criteria. The committee also conducts site visits to former Soviet Union biological research institutes, helps to identify qualified potential U.S. collaborators, and reviews project technical reports.

During 2000-2004, the committee met in person ten times to evaluate proposals, participate in site visits, and conduct other business. Committee meetings provided a forum for the members to clarify their understanding of individual proposals and agree on recommendations.

Pre-meeting Activities

Prior to each committee meeting, all members received the proposals. They were expected to read each proposal and be prepared to discuss its merits at the meeting. Any committee member who was perceived as having a conflict of interest on a specific proposal was asked to recuse himself or herself from the review and discussion of that proposal. Each proposal was assigned two lead members to evaluate the proposal according to the criteria below and lead the discussion on the proposal. The lead members' areas of expertise were matched as closely as possible with the proposal's subject matter, as determined by the chair and the responsible staff officer.

In addition to review of the written proposals, two or more committee members have typically conducted a site visit to each research institute or laboratory being considered for funding. The purpose of the site visit was to determine whether the quality and capacity of the research team, equipment, and facilities were adequate to support any subsequently proposed research. The committee members attempted to visit each facility from which they received proposals at regular intervals of three to four years, as requested by the sponsor. Because many of the institutes and laboratories were located in the same geographic area, it was possible to visit several sites at a time.

Evaluation Criteria
Committee members used the following criteria to evaluate each proposal:

- Scientific importance of the topic;
- Quality of the proposal;
- Quality and capacity of the principal investigator, research team, and facilities;
- Provision for strong U.S. collaboration;
- Engagement of former Soviet biological weapon expertise;
- Promotion of transparency; and
- Sustainability of the research following completion of the project.

Committee Meetings
In each meeting, committee members shared their individual assessments and discussed the results of previous site visits. The committee then placed each proposal in one of the following categories:

1) Recommended for funding;
2) Recommended for further development and resubmission;
3) Not recommended for funding; and
4) Recommended for referral to another federal agency.

Conflicting opinions were discussed until all members agreed. Proposals recommended for funding were not placed in any priority order.

Proposals that were recommended for funding were those that the committee rated highly in all the criteria for evaluation. Proposals recommended for further development were those that had been deemed by the committee to be of scientific importance, but were lacking in one or more of the criteria listed above. The committee highlighted the areas in which the proposals were lacking and requested those areas be addressed before the proposals were resubmitted.

Proposals that were not recommended for further funding or further development were those that were lacking in one or more of the above criteria, and were also deemed by the committee not to be scientifically important. If the proposed plan of action was viewed by the committee as impossible given the constraints of the state of the science, the committee did not recommend the proposal for funding.

Proposals that were viewed as scientifically important but outside the area of DTRA's interest, such as those affecting agriculture or a general public health condition (for example, cancer), or those already being addressed in another agency's program, were recommended to be referred to another agency.

Transmittal to Sponsor and Public Release
After each committee meeting, the responsible staff officer prepared a summary of the committee's recommendations. This document was reviewed by the committee chair and transmitted to DTRA. Occasionally, the summary was incorporated into the project's regular

quarterly report to the sponsor. DTRA made the final funding decisions, based on the committee's recommendations and each proposal's fit with DTRA research priorities.

Declaration of Technical Data Conformity

The Contractor, the National Academies, hereby declares that, to the best of its knowledge and belief, the technical data delivered herewith under Contracts No. DTRA01-99-0039 and DTRA01-02-D-003 are complete, accurate, and comply with all requirements of the contract.

Date: August 2, 2005

Authorized Official: Glenn Schweitzer, Director, Office for Central Europe and Eurasia

A copy of this report is available at the National Academy Press website (www.nap.edu). Copies the full proposals from each meeting in 2000-2004 are available in the NRC Public Access File.

Attachment 3

Committee on the Review of Research Proposals for Cooperation with Former Soviet Biological Weapons Personnel and Institutes 2000-2004

David Ashford, Centers for Disease Control and Prevention
Carol Blair, Colorado State University
Gail Cassell, Eli Lilly and Company
David Franz (Chair), Southern Research Institute
Maurice Hilleman, Merck Research Laboratories
Christopher Howson, March of Dimes
Peter Jahrling, United States Army Medical Research Institute of Infectious Diseases
Paul Keim, Northern Arizona University
James LeDuc, National Center for Infectious Diseases
Matthew Meselson, Harvard University
Thomas Monath, OraVax-Peptide Therapeutics and Harvard University (2000-2002)
Rebecca Morton, Oklahoma State University (2003-2004)
Frederick Murphy, University of California, Davis
Joseph Silva, University of California, Davis
Richard Witter, Michigan State University
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