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OA/ID Number: 62069
Folder ID Number: 62069-001

Folder Title:
Russia - Science and Technology [1989]

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**S&T AGREEMENTS
SOVIET UNION**

S&T AGREEMENTS

Science and Technology Agreements with the Soviet Union

1. Cooperation in the Field of Medical Science and Public Health. Executive Agent: Department of Health and Human Services, U.S. Public Health Service, Office of International Health.
2. Cooperation in the Field of Environmental Protection. Coordinator Executive Agent: Environmental Protection Agency.
3. Cooperation in the Field of Agriculture. Executive Agent: Department of Agriculture.
4. Cooperation in Studies of the World Ocean. Executive Agent: Department of Commerce, National Oceanic and Atmospheric Administration.
5. Scientific and Technical Cooperation in the Field of Peaceful Uses of Atomic Energy. Executive Agent: Department of Energy (formerly, U.S. Atomic Energy Commission)
 - A. Joint Projects in Controlled Thermonuclear Fusion and Plasma Physics. Lead Agency: Department of Energy (formerly, U.S. Atomic Energy Commission)
 - B. Cooperation in the Field of Research in Fundamental Properties of Matter. Lead Agency: Department of Energy.
 - C. Cooperation in the Field of Fast Neutron Breeder Reactors. Lead Agency: Department of Energy (formerly, U.S. Atomic Energy Commission).
 - D. Cooperation in the Field of Civilian Nuclear Reactor Safety. Lead Agency: Nuclear Regulatory Commission.
6. Cooperation in Artificial Heart Research and Development. Executive Agent: Department of Health and Human Services; U.S. Public Health Service; National Institutes of Health; National Heart, Lung and Blood Institute.
7. Cooperation in the Field of Housing and Other Construction Relating to Extreme Climatic and Unusual Geological Conditions. Executive Agent: Department of Housing and Urban Development.
8. Cooperation in Transportation Science and Technology. Executive Agent: Department of Transportation.

POST OFFICE
WASHINGTON, D. C.

NOV 18 1964

TO THE DIRECTOR
OF THE BUREAU OF RESEARCH

WASHINGTON, D. C.

RE: [illegible]

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9. Cooperation in the Field of Basic Scientific Research.
Executive Agent: Office of Science and Technology Policy.
- A. Cooperation in the Basic Sciences between the National Science Foundation, U.S.A., and the Academy of Sciences of the USSR.
Lead Agency: National Science Foundation.
- B. Cooperation in Geoscience between the Department of the Interior of the U.S.A. and the Ministry of Geology of the USSR.
Lead Agency: Department of the Interior, U.S. Geological Survey.
10. Cooperation in the Physical, Chemical, and Engineering Sciences (proposed).
Lead Agency: Department of Commerce, National Institute of Standards and Technology.

Summary of Cooperation in Health Between
the U.S. Department of Health and Human Services
and the Ministry of Health of the U.S.S.R.
11/89

AGREEMENTS AND ORGANIZATION

Core Agreements:

1. U.S.-U.S.S.R. Agreement on Cooperation in the Field of Medical Science and Public Health. Signed May 23, 1972; extended for 5 years in 1977; extended for 5 years in 1982; was automatically renewed in May 1987, for an additional five years.
2. Agreement Between the U.S. and U.S.S.R. on Cooperation in Artificial Heart Research and Development. Signed June 28, 1974; extended for 5 years in 1977; extended for five years in 1982; was automatically renewed in June 1987, for an additional five years.

Organization: A Joint Committee, co-chaired by the U.S. Assistant Secretary for Health and the U.S.S.R. Deputy Minister of Health, was formed to annually review the progress of cooperation. After a hiatus of seven years of high-level visits, the Eighth Joint Committee Meeting was held April 13-17, 1987, in Bethesda, Maryland, at the NIH campus. The Ninth meeting was held in Moscow, November 14-17, 1988. The Tenth meeting of the Joint Committee is scheduled to meet in Washington, at a date to be set, possibly June 1990.

Financing: The Public Health Service (PHS) does not set aside any funds for U.S.-Soviet collaboration. Instead, each activity and exchange is judged on the basis of its merits and competes with other foreign and domestic research opportunities. We are thus assured that the collaborative activities, as judged by each participating agency, strongly supports their domestic health mission.

Official Areas of Cooperation:

- A. Cardiopulmonary Diseases - Artificial Heart R&D
- B. Malignant Neoplasia
- C. Environmental Health
- D. Arthritis and Musculoskeletal Diseases
- E. Viral Infections Other than HIV
- F. Eye Diseases
- G. Individual Health Scientist Exchanges (on various topics)
- H. Primatology
- I. Biomedical Problems of Alcohol and Drug Abuse
- J. Human Immunodeficiency Virus (HIV) Infection

EXECUTIVE SUMMARY OF RECENT ACTIVITY

The Ninth Session of the U.S.-U.S.S.R. Joint Health Committee was held in Moscow, November 14-17, 1988, in order to review bilateral cooperation in health and approve plans for future activities. Assistant Secretary for Health, Dr. Robert E. Windom, and First Deputy Minister of Health, Dr. Igor N. Denisov, co-chaired the meeting. A summary memorandum was signed that recognized eleven scientific areas of cooperation between biomedical research

workers and public health specialists of the two countries. As a result of close cooperation during 1988, and joint efforts to resolve tensions in several problem areas, three new areas of collaboration were approved: Primatology, Biomedical Problems of Alcohol and Drug Abuse, and Human Immunodeficiency Virus (HIV) Infection, commonly known as AIDS.

During the Joint Committee meeting, agreement was reached on joint language concerning intellectual property rights as well as an affirmation to fully comply with the laws and regulations of both countries concerning the protection of human subjects and laboratory animal welfare. Other discussions focused on what could be done to encourage a broader range of exchanges, particularly those involving the exchange and training of young scientists for extended periods of time, and an expansion of activities outside of the two agreements. A more effective cooperation is also being sought in developing better access to both U.S. and Soviet biomedical literature.

In 1989, the National Institute of Mental Health participated in a State Department-led delegation visit to Soviet Psychiatric Hospitals for which there was an extraordinary degree of cooperation from the Ministry of Health. This may lead to resumption of cooperation in the mental health field some time in the future.

HHS Secretary, Dr. Louis Sullivan, has been invited to visit the Soviet Union and this trip is tentatively scheduled for April 12-22, 1990. The Department will host the next meeting of the U.S.-USSR Joint Health Committee at a date to be determined, probably in June, 1990.

All proposed exchanges and research with the Soviet Union must be reviewed and cleared in advance with the Department of State. Proposals are reviewed to assure they are consistent with U.S. policies on security, technology transfer, and trade. There is no apparent adverse environmental impact from this collaboration.

U.S.-U.S.S.R Agreement on Cooperation in the Field of Agriculture

The U.S.-U.S.S.R. Agreement on Cooperation in the Field of Agriculture was signed in June 1973 and renewed in 1978, 1983 and 1988. The U.S.S.R. Joint Committee, chaired at the Under Secretary-level, develops and authorizes activities under the Agreement. The current Soviet counterpart to the United States Department of Agriculture (USDA) is the State Commission on Food and Purchases.

On December 8-9, 1989, USDA Under Secretary for International Affairs and Commodity Programs, Richard T. Crowder, will lead the U.S. delegation to the 9th Session of the U.S.-U.S.S.R. Joint Committee on Cooperation in the Field of Agriculture in Moscow. The purpose of the meeting is to review past cooperation between the United States and Soviet Union in agriculture and confirm the current themes of cooperation, delegation exchanges, and arrangements for 1990-91.

Prior to the Joint Committee session, working group meetings will be held between U.S. and Soviet counterparts. There are currently three working groups: The Agricultural Economic Research and Information Working Group, chaired by USDA Deputy Under Secretary for International Affairs and Commodity Programs Ann M. Veneman; the Agricultural Research and Technological Developments Working Group, chaired by USDA Associate Administrator of the Cooperative Research Service, Dr. Clare I. Harris; and the Food Processing Working Group chaired by Assistant Secretary for Capital Goods, International Construction and Trade Development, Mr. Jon M. Huntsman. A fourth working group on forestry will be formed at this year's meeting.

In December 1989 the Joint Committee is expected to approve a program of work for 1990-1991 which includes trade-related exchanges such as: the evolving Soviet comparative advantage in agricultural trade; new commercial entities of the Soviet trade system which is under development; the market potential for processed/packaged foods and other high value products through direct contact with representatives of U.S.S.R. trade agencies and firms; and the economic aspects of cotton, fur, poultry, and vegetable oil industries.

U.S. scientific teams will visit the Soviet Union to study: Soviet state-of-the-art technology in animal husbandry practices to determine the prospects for supplying beef and dairy cattle semen and embryos, as well as swine genetics; weather and climate applications for agriculture; preserving reindeer ecological systems; enhancing and protecting water quality; germplasm exchanges for fruit and nut trees; and development of a joint plant genetic resource base. A joint publication on soil and water conservation will be produced.

PEACEFUL USES OF ATOMIC ENERGY

BACKGROUND:

5/8 June 1989

The Agreement for Scientific and Technical Cooperation in the Peaceful Uses of Atomic Energy (PUAE) was signed in June 1973, by President Nixon and General Secretary Brezhnev, and extended most recently in ~~May 1988~~. DOE acts as the Executive Secretariat for the U.S., with the State Committee for the Utilization of Atomic Energy (SCUAE) acting in the same capacity for the U.S.S.R. Collaboration under the Agreement is considered successful and of significant mutual benefit.

Since its inception the PUAE Agreement has provided a valuable framework for cooperation in research and development in the fields of magnetic confinement fusion and fundamental properties of matter. In May 1988, a new Memorandum of Cooperation in Civilian Reactor Safety was signed into force under the Agreement by the U.S./N.R.C. Chairman and the Chairman of the SCUAE. A very active program has evolved since that time, involving both NRC and DOE, covering ten areas related to safety and to the environmental consequences of the Chernobyl accident.

RECENT DEVELOPMENTS:

The PUAE Agreement has been updated and is in the final stages of review in preparation for a five year renewal. The Soviets have proposed and the U.S. is considering, renewal of the Agreement by President Bush and General Secretary Gorbachev during the projected Spring Summit 1990.

The Secretary of Energy has recently proposed a new initiative directed at enhancing the safe operation of existing U.S.S.R. nuclear facilities. The initiative focuses on assistance in "operational safety", including such elements as procedural support for operations, operator training and management oversight. Enhanced operational safety could reduce the probability of accidents like Chernobyl, and thereby reduce the threat to international energy security, human life and the environment. It is the Secretary's intent to utilize the services of the Institute of Nuclear Power Operators (INPO) to provide expert services for the effort. The initial Soviet reaction to the initiative is favorable.

Preliminary discussions are also underway on possible cooperation in nuclear waste management including information exchange on technologies and approaches used in waste handling, treatment and disposal, and as appropriate, encouraging and facilitating the improvement of waste related environmental standards in the Soviet Union.

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11/89

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HHS Secretary, Dr. Louis Sullivan, has been invited to visit the Soviet Union and this trip is tentatively scheduled for April 12-22, 1990. The Department will host the next meeting of the U.S.-USSR Joint Health Committee at a date to be determined, probably in June, 1990.

All proposed exchanges and research with the Soviet Union must be reviewed and cleared in advance with the Department of State. Proposals are reviewed to assure they are consistent with U.S. policies on security, technology transfer, and trade. There is no apparent adverse environmental impact from this collaboration.

Artificial Heart Research and Development

The study of the blood/materials interface in vivo and in vitro to improve biomaterials for circulatory devices is the primary goal of joint research under the US-USSR Agreement for Cooperation on Artificial Heart Research and Development. During FY 89, Soviet scientists continued joint research in the USA on physicochemical properties of blood compatible polymers and their interactions with blood components. These studies explore the hypothesis that the blood compatibility of polymers is governed by the fate of plasma proteins absorbed onto the surface of the polymer. Conformational alterations of the proteins, release of active fragments into the blood stream and provision of active sites on surface-retained proteins, lead to initiation of deleterious processes such as coagulation, platelet adhesion/aggregation and complement activation. The collaborating scientists have developed methods to favorably alter these events and study their course. It is anticipated that continued exchanges for work on polymers and polymer treatments will lead to improved blood compatibility of clinically significant materials and devices.

There are no environmental implications under this agreement.

Title: U.S.-U.S.S.R. Agreement on Cooperation in the Field of Housing and Other Construction

The U.S.-U.S.S.R. Agreement on Housing and Other Construction was signed in Moscow on June 28, 1974 by President Nixon and Chairman Kosygin. Every five years the Agreement is automatically renewed on its anniversary date unless either side gives six months notice of intention to terminate it. It was renewed in 1979 and 1984. While the third five-year term has been completed, the Agreement has been only temporarily extended pending the results of an on-going U.S. Government review of its activities. There was very little activity in 1989, with virtually all of it confined to Working Groups 10.01 and 10.04.

The major purpose of the Agreement is to encourage a mutually beneficial program of technical exchanges and seminars on various aspects of construction design, technology, and materials for housing, infrastructure, and urban development.

The Department of Housing and Urban Development (HUD) is the U.S. Executive Agency for the Agreement; the Soviet Executive Agency is the State Construction Committee (Gosstroy).

The six Working Groups establish technical work plans and supervise the development of projects. A listing of these Groups follows (the U.S. lead agency for each Group is indicated):

Working Group 10.01 - Building Design and Construction Technology (Public Buildings Service, General Services Administration/GSA);

Working Group 10.02 - Utility Systems (HUD/Office of Policy Development and Research-PD&R);

Working Group 10.03 - Building Materials and Components (HUD/Office of Housing-FHA);

Working Group 10.04 - Construction in Seismic Areas (National Science Foundation (NSF);

Working Group 10.05 - Construction under Extreme Climatic and Unusual Geological Condition (Department of the Army); and

Working Group 10.06 - Urban Planning, Development and Management (HUD/Office of Community Planning and Development-CPD).

DRAFT:HUD:JGERAGHTY
November 29, 1989

Tel.: 755-5770

THE US-USSR AGREEMENT ON COOPERATION IN TRANSPORTATION SCIENCE AND TECHNOLOGY

The US-USSR Transportation Agreement was negotiated during 1986-1988 and signed at the May 1988 Summit in Moscow. Concluding an agreement was based primarily on strong recommendations of experts in both countries to resume bilateral technical cooperation on civil aviation air traffic control systems to meet predicted capacity/safety demands well into the next century.

The U.S. Department of Transportation and the Soviet State Committee on Science and Technology were named Executive Agents for the Agreement. Annex I of the Agreement established four (4) major areas for cooperation: civil aviation, railroad safety, highway bridge construction, and highway/traffic safety programs. Formal cooperation began in May 1989 at the First Session of the US-USSR Joint Committee on Transportation held in Washington. At that meeting plans were made for cooperative work in all areas listed in Annex I, except railroad safety. (Plans for exchanges in the rail area were held in Moscow in September 1989). It was agreed that the Second Session of the Joint Committee would be held in the Soviet Union at a mutually convenient period in 1990.

Meetings on civil aviation and railroad safety were held during September and November 1989 in Moscow. Excellent exchanges took place in an atmosphere of exceptional openness. Highlights are:

- **Accident investigation:** specialists from both sides were nominated to investigate accidents of nationally manufactured/owned aircraft on other party's territory, and Soviets supplied beneficial data on metallurgical stress measurement affecting engine compressor disc failure.
- **Air traffic control systems:** specialists agreed to carry out plans for cooperation and continue to conduct joint ATC studies to facilitate a transition to regionally and globally compatible systems.
- **Satellite technology and spectrum usage:** the Soviet side will provide a technical specifications document on GLONASS similar to the U.S. ICD-GPS-200, which was formally presented at the meeting. The Soviet side proposed: (a) establishing a joint group to develop performance standards for airborne equipment, and (b) developing a bilateral governmental agreement to meet the concerns of representatives of IATA, several states, and international organizations in the ICAO Future Air Navigation Committee, who have raised the question of providing guarantees for the use of GPS and GLONASS systems.
- **Railroad safety:** a schedule for exchanges on agreed topics was approved, and cooperation on high speed rail and two topics on railroad management (privatization) were proposed by the Soviets.

U.S.-USSR Agreement On Cooperation in the Field of Basic
Scientific Research

OSTP is Executive Agent.

The agreement consists of a framework and two implementing Memoranda of Understanding (MOUs). The framework was signed on January 8, 1989. The MOUs are between:

National Science Foundation (NSF) - Soviet Academy of Sciences

U.S. Geological Survey (USGS) - Soviet Ministry of Geology

The agreement covers basic science. It establishes eight broad areas of cooperation (attached). The NSF MOU lists 45 more specific topics and the USGS MOU lists 16 topics (attached).

The framework also established a Joint Commission to: review, coordinate, and facilitate cooperation; and, consider and recommend changes to the areas of cooperation. The Joint Commission would likely meet once a year alternately in the U.S. and USSR. The agreement calls for Executive Agents, OSTP and GKNT, to assist the Joint Commission by designating Co-Chairpersons. State could be the Executive Secretary for OSTP, if desired.

As Executive Agent, OSTP will be expected to head the U.S. delegation to the Joint Commission meetings.

The next step is to conduct the first Joint Commission meeting. Planning is beginning for this meeting.

Environmental Impact: Cooperation is planned in the geosciences, life sciences, and scientific problems of the Arctic and the North and global change. These areas are highlighted in the attached materials.

ANNEX III

AREAS OF COOPERATION
BASIC SCIENCE Agreement

1. Geosciences
2. Basic Scientific Research in Engineering Sciences
3. Scientific Problems of the Arctic and the North
4. Life Sciences
5. Science Policy
6. Chemistry
7. Mathematics
8. Theoretical Physics

ANNEX II
AREAS AND TOPICS
FOR COOPERATION IN THE FIELD OF BASIC SCIENTIFIC RESEARCH
BETWEEN

THE NATIONAL SCIENCE FOUNDATION
OF THE UNITED STATES OF AMERICA

AND

THE ACADEMY OF SCIENCES
OF THE UNION OF SOVIET SOCIALIST REPUBLICS

1. MATHEMATICS

- o Complex analysis
- o Geometry (differential, algebraic, and topology)
- o String theory
- o Differential equations
- o Algebraic structures
- o Representation theory
- o Control theory
- o Dynamical systems
- o Algebra
- o Mathematical physics

2. THEORETICAL PHYSICS

- o Theoretical nuclear physics
- o Relativistic astrophysics
- o Mathematical physics
- o Theoretical atomic, molecular, optical, and plasma physics
- o Cosmic ray physics
- o Condensed matter theory
- o Cosmology

3. SCIENTIFIC PROBLEMS OF THE ARCTIC AND THE NORTH

- o Global biogeochemical cycles
- o Permafrost studies related to world climate change
- o Studies of the magnetospheric cusp

4. GEOSCIENCES

- o Global change
- o Global biogeochemical cycles
- o Regional geology, stratigraphy, and tectonics
- o Paleontology and geochronology
- o Magmatic and metamorphic processes
- o Volcanoes and volcanic processes
- o Paleoclimate and climate change
- o Surficial processes and geomorphology
- o Continental lithospheric seismology, geophysics, and geochemistry
- o Seismic risk and earthquake prediction
- o Continental scientific drilling
- o Physical and chemical properties of the earth's interior
- o Upper mantle studies

5. CHEMISTRY

- o Molecular environmental catalysis
- o Bioelectrochemistry of membranes

6. LIFE SCIENCES

- o Plant biology (flowering research)
- o Cell biology
- o General and cellular physiology
- o Biodiversity
- o Ecology
- o Protein polymorphisms and other molecular-genetic markers in domesticated plants and animals
- o Developmental biology
- o Neurochemistry

7. BASIC RESEARCH IN ENGINEERING SCIENCES

- o Thermal engineering (heat and mass transfer)

8. SCIENCE POLICY

- o Exchange of information on R&D funding, R&D personnel, and R&D policy.

ANNEX II

LIST OF TOPICS FOR COOPERATION IN GEOSCIENCE RESEARCH

USGS MOU

1. Regional geology, stratigraphy, and tectonics
2. Paleontology and geochronology
3. Magmatic and metamorphic processes
4. Volcanoes and Volcanic processes
5. Mineralogy
6. Marine geology, geochemistry, and geophysics
7. Mineral resources
8. Energy resources
9. Water resources
10. Paleoclimate and climate change
11. Surficial processes and geomorphology
12. Continental lithospheric seismology, geochemistry, and geophysics
13. Seismic risk and earthquake prediction
14. Continental scientific drilling
15. Deep earth physical and chemical processes
16. Global change

Summary of Agreement Between NIST and USSR

Agencies Included:

1. National Institute of Standards and Technology (NIST)
2. USSR Academy of Sciences

Areas of Cooperation: Physical, Chemical, and Engineering Sciences.

Methods of Cooperation: Exchange of scientists and information, joint meetings/seminars, and joint research projects.

The common theme of these cooperative activities is measurement and the scientific research that underlies it. Effective and improved measurement (worldwide) is a critical element in achieving advanced technology, industrial quality control, and environmental protection.

Examples of recent topics:

- Standard reference data in chemical thermodynamics and thermal chemistry
- Advanced spectroscopic studies (atomic & molecular physics)
- Wear of alloy coatings, wear and debris particles, and data on wear of polymers (tribology)
- High temperature chemistry
- Laser spectroscopy and photo chemistry
- Electromagnetic fields measurement, non-ionizing radiation
- Crystallography

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01. Report	Background on S&T in Russia (2 pp.)		(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
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Subseries: International Files - Country Files
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P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P-3 Release would violate a Federal statute [(a)(3) of the PRA]
P-4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
P-6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
(b)(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

BILATERAL COOPERATIVE S&T AGREEMENTS WITH RUSSIA

1. AGRICULTURE
2. ARTIFICIAL HEART
3. BASIC SCIENTIFIC RESEARCH
4. ENVIRONMENTAL PROTECTION
5. FUELS AND ENERGY
6. OCEANS STUDIES
7. PEACEFUL USES OF ATOMIC ENERGY
8. SPACE
9. TRANSPORTATION

BILATERAL COOPERATIVE AGREEMENTS WITH THE FORMER USSR

1. AGRICULTURE

TERM: 6/19/93

EXECUTIVE AGENTS: USDA
COMMISSION ON FOOD AND FOOD PROCUREMENT

2. ARTIFICIAL HEART

TERM: 6/28/97

EXECUTIVE AGENTS: HHS
MINISTRY OF HEALTH, ALL UNION CENTER FOR
CARDIOLOGY RESEARCH

3. BASIC SCIENTIFIC RESEARCH

TERM: 1/08/94

EXECUTIVE AGENTS: OSTP
MINSCI

SUBSIDIARY MOU PARTNERS:

NSF-RUSSIAN ACADEMY OF SCIENCES
NIST-RUSSIAN ACADEMY OF SCIENCES
USGS-RUSSIAN COMMITTEE ON GEOLOGY
USGS-RUSSIAN GEODESY AND CARTOGRAPHY
SERVICE

4. ENVIRONMENTAL PROTECTION

TERM: 5/23/97

EXECUTIVE AGENTS: EPA
MINISTRY OF ENVIRONMENT

5. FUELS AND ENERGY AGREEMENT

TERM: 6/17/97

EXECUTIVE AGENTS: DOE
MINISTRY OF FUELS AND ENERGY

6. OCEAN STUDIES

TERM: 5/31/95

EXECUTIVE AGENTS: NOAA
MINSCI

7. PEACEFUL USES OF ATOMIC ENERGY

TERM: 6/01/95

**EXECUTIVE AGENTS: DOE
MINISTRY OF ATOMIC POWER & INDUSTRY**

8. SPACE

TERM: 6/17/97

**EXECUTIVE AGENTS: NASA
RUSSIAN SPACE AGENCY**

9. TRANSPORTATION

TERM: 5/31/93

**EXECUTIVE AGENTS: DOT
MINSCI**

FREESTANDING MEMORANDA OF COOPERATION

OCEAN DRILLING PROGRAM

NSF - RUSSIAN ACADEMY OF SCIENCES

METROLOGY

NIST - STATE COMMITTEE ON STANDARDS

ISF SUPPLEMENTAL GRANTS PROGRAM

The International Science Foundation (ISF) for the Former Soviet Union will consider proposals for support of investigators from the FSU who are participating in competitively-funded long-term collaborative research projects with American partners. To be eligible, the original project must: be in the area of basic research; have been jointly designed by at least one principal investigator each from the United States and the FSU who are explicitly identified as such in the original proposal; and have been competitively funded through an international cooperative research program of a U.S. government agency (e.g., NIH, NSF, USGS, NIST, NOAA) or other recognized U.S. nationwide program.

An ISF Supplemental Grant may consist of support distributed among the following categories, for a total amount not to exceed \$10,000. Each request must indicate the proposed breakdown of funding among these categories.

1. Salary of the FSU Principal Investigator (P.I.) of up to \$1,500 per year, and of up to four other members of the P.I.'s team of up to \$750 per year, for a total amount not to exceed \$5,000 for the entire period of the grant (team members must be named in the proposal and their participation in the project must be verified by the U.S. partner);
2. An allowance to the FSU Principal Investigator for research equipment, telecommunications, supplies, and scientific literature directly connected with the conduct of the project, and itemized in the proposal, of up to \$3,500; and
3. An allowance to the FSU Principal Investigator for international travel directly connected with the conduct of the project (by either the P.I. or team members), including presentation of results at international scientific meetings, of up to \$1,500.

Please note that the sum of the cost limitations of the above categories deliberately exceeds the \$10,000 overall grant limitation. It is the responsibility of the FSU P.I. to design a budget that reflects his or her research circumstances and priorities while falling within the overall cost ceiling of the program.

Up to 10% of the salary support provided through these grants may be shared with the P.I.'s institution as indirect cost in consideration of the use of its facilities for the research performed. This indirect cost fee should be calculated as falling within the overall \$10,000 grant limitation. Its inclusion is optional but strongly encouraged.

The total duration of the grant may be up to two years, but the termination date of the ISF grant may not be later than the termination date of the overall project. Salary support will be awarded annually. The FSU P.I. must submit a brief report on the first year's activity in order to obtain funding for the second year.

The ISF will also consider requests to support FSU expenses in connection with small, research-oriented collaborative workshops and seminars whose main objective is to identify and promote opportunities for collaborations in especially promising fields. Normally ISF support will be restricted to travel and modest organizational expenses for FSU participants not to exceed \$10,000 for each activity. Preference will be given to activities involving young scientists (less than six years since the Ph.D. or *Kandidat* degree)..

Application for ISF Supplemental Grants is made by the FSU P.I. using the attached information and budget forms. Applications are to be submitted to designated collection points in the FSU listed in the attachment to this announcement. Each application must be accompanied by a letter from the P.I.'s American partner which: identifies the project title, grant number or other official identifying information; identifies the funding source of the foreign counterpart (with name, mailing address, e-mail address, and telephone number of the cognizant official); and confirms the active participation of each of the named FSU researchers in the collaborative project. Any application not meeting these requirements will be returned to the P.I. The ISF reserves the sole right to determine whether any proposal meets the restricted eligibility criteria of this program. A limited amount of funds are reserved for this program and awards will be made on a first-come, first-served basis.

Attachments:

- Application Form
- Application Addresses

APPLICATION FORM

ISF SUPPLEMENTAL GRANTS PROGRAM

The application must be completed in English except Points 3 and 5.

1. Scientific field and its code (see Appendix 3)
2. Principal Investigator:
 - a. Full name in English transcription
 - b. Full name in native language as in passport.
 - c. Date of birth
 - d. Passport serial number, date and place issued
 - e. Place of work
 - f. Position
 - g. Citizenship
 - h. Work address, telephone, fax, and E-mail
 - i. Home address, telephone
3. Other Research Personnel: same information as requested for Principal Investigator (see #2). Attach additional pages if necessary.
11. Formal title of the project
12. Information about U.S. partner: name, institution, mailing address, fax, e-mail
13. Information about U.S. sponsoring organization : name of organization, name of cognizant official, mailing address, fax, e-mail
14. Total requested budget (in U.S. dollars)

[illegible]

Science and Technology Agreements with the Soviet Union

1. Cooperation in the Field of Medical Science and Public Health. Executive Agent: Department of Health and Human Services, U.S. Public Health Service, Office of International Health.
2. Cooperation in the Field of Environmental Protection. Coordinator Executive Agent: Environmental Protection Agency.
3. Cooperation in the Field of Agriculture. Executive Agent: Department of Agriculture.
4. Cooperation in Studies of the World Ocean. Executive Agent: Department of Commerce, National Oceanic and Atmospheric Administration.
5. Scientific and Technical Cooperation in the Field of Peaceful Uses of Atomic Energy. Executive Agent: Department of Energy (formerly, U.S. Atomic Energy Commission)
 - A. Joint Projects in Controlled Thermonuclear Fusion and Plasma Physics. Lead Agency: Department of Energy (formerly, U.S. Atomic Energy Commission)
 - B. Cooperation in the Field of Research in Fundamental Properties of Matter. Lead Agency: Department of Energy.
 - C. Cooperation in the Field of Fast Neutron Breeder Reactors. Lead Agency: Department of Energy (formerly, U.S. Atomic Energy Commission).
 - D. Cooperation in the Field of Civilian Nuclear Reactor Safety. Lead Agency: Nuclear Regulatory Commission.
6. Cooperation in Artificial Heart Research and Development. Executive Agent: Department of Health and Human Services; U.S. Public Health Service; National Institutes of Health; National Heart, Lung and Blood Institute.
7. Cooperation in the Field of Housing and Other Construction Relating to Extreme Climatic and Unusual Geological Conditions. Executive Agent: Department of Housing and Urban Development. *Being Terminated*
8. Cooperation in Transportation Science and Technology. Executive Agent: Department of Transportation.

9. Cooperation in the Field of Basic Scientific Research.
Executive Agent: Office of Science and Technology Policy.
- A. Cooperation in the Basic Sciences between the National Science Foundation, U.S.A., and the Academy of Sciences of the USSR.
Lead Agency: National Science Foundation.
- B. Cooperation in Geoscience between the Department of the Interior of the U.S.A. and the Ministry of Geology of the USSR.
Lead Agency: Department of the Interior, U.S. Geological Survey.
10. Cooperation in the Physical, Chemical, and Engineering Sciences (proposed).
Lead Agency: Department of Commerce, National Institute of Standards and Technology.

11. NASA Agreement

Summary of Cooperation in Health Between
the U.S. Department of Health and Human Services
and the Ministry of Health of the U.S.S.R.
11/89

AGREEMENTS AND ORGANIZATION

Core Agreements:

1. U.S.-U.S.S.R. Agreement on Cooperation in the Field of Medical Science and Public Health. Signed May 23, 1972; extended for 5 years in 1977; extended for 5 years in 1982; was automatically renewed in May 1987, for an additional five years.
2. Agreement Between the U.S. and U.S.S.R. on Cooperation in Artificial Heart Research and Development. Signed June 28, 1974; extended for 5 years in 1977; extended for five years in 1982; was automatically renewed in June 1987, for an additional five years.

Organization: A Joint Committee, co-chaired by the U.S. Assistant Secretary for Health and the U.S.S.R. Deputy Minister of Health, was formed to annually review the progress of cooperation. After a hiatus of seven years of high-level visits, the Eighth Joint Committee Meeting was held April 13-17, 1987, in Bethesda, Maryland, at the NIH campus. The Ninth meeting was held in Moscow, November 14-17, 1988. The Tenth meeting of the Joint Committee is scheduled to meet in Washington, at a date to be set, possibly June 1990.

Financing: The Public Health Service (PHS) does not set aside any funds for U.S.-Soviet collaboration. Instead, each activity and exchange is judged on the basis of its merits and competes with other foreign and domestic research opportunities. We are thus assured that the collaborative activities, as judged by each participating agency, strongly supports their domestic health mission.

Official Areas of Cooperation:

- A. Cardiopulmonary Diseases - Artificial Heart R&D
- B. Malignant Neoplasia
- C. Environmental Health
- D. Arthritis and Musculoskeletal Diseases
- E. Viral Infections Other than HIV
- F. Eye Diseases
- G. Individual Health Scientist Exchanges (on various topics)
- H. Primatology
- I. Biomedical Problems of Alcohol and Drug Abuse
- J. Human Immunodeficiency Virus (HIV) Infection

EXECUTIVE SUMMARY OF RECENT ACTIVITY

The Ninth Session of the U.S.-U.S.S.R. Joint Health Committee was held in Moscow, November 14-17, 1988, in order to review bilateral cooperation in health and approve plans for future activities. Assistant Secretary for Health, Dr. Robert E. Windom, and First Deputy Minister of Health, Dr. Igor N. Denisov, co-chaired the meeting. A summary memorandum was signed that recognized eleven scientific areas of cooperation between biomedical research

US-USSR ENVIRONMENTAL AGREEMENT

SEPTEMBER 1989

The U.S.-USSR Agreement on cooperation in the Field of Environmental Protection ("Environmental Agreement"), among the early bilateral science and technology (S&T) agreements between the two countries, was signed by the Heads of State on May 23, 1972 at the Moscow summit of that year. It was extended for a second term in May 1977 and a third in May 1982. The Agreement currently is nearing the midpoint of its fourth five-year term, which began in May 1987. EPA is the executive agency for the U.S. side. The Soviet counterpart is Goskompriroda, the USSR State Committee for Environmental Protection. The next (twelfth) Environmental Joint Committee is scheduled for January 1990 in Washington, D.C.

The Environmental Agreement formally provides for cooperation in eleven topical area, with another --environmental education-- having gradually acquired the de facto status of a twelfth area. The areas are: I) air pollution, II) water pollution, III) pollution associated with agriculture, IV) urban environment, V) nature conservation, VI) marine pollution, VII) biological and genetic effects, VIII) climatic effects, IX) earthquake prediction, X) Arctic/ subarctic ecosystems, XI) legal /administrative measures, and "12") environmental education. Within this framework are six working groups, 32 active groups, six projects under evaluation for termination or resumption in new directions, and four developing as new projects or proposals. Some projects include sub-projects or individual activities. At the close of 1988, the total of discrete activities numbers close to seventy. Most of the growth in 1988 was due to intensified activity in Area VIII.

Some 10 U.S. federal departments or agencies are active under the Agreement, together with a mix of universities, non-governmental organizations and industrial associations. A third of the projects are led by EPA personnel, mainly in Area I, II and VII. NOAA (National Climate Program Office), Interior (Fish and Wildlife Service), and the Department of Transportation (U.S. Coast Guard) have the led in implementing other parts of the Agreement. Oversight, coordination and communication responsibilities are vested in an Executive Secretariat, located in the EPA Assistant Administrator's Office of International Activities.

The Soviet side is represented by about a dozen ministries and state committees and an equal number of research institutes of the USSR Academy of Sciences. Authority for oversight and coordination on the Soviet side was moved in early 1988 from the State Committee for Hydrometeorology (Hydromet) to the new State Committee for Environmental Protection (Goskompriroda - GKP). In 1989, GKP is expected to issue a draft of new, comprehensive environmental legislation ("Fundamental Law") and a "Perspective" on the USSR's environmental strategy through 2005.

workers and public health specialists of the two countries. As a result of close cooperation during 1988, and joint efforts to resolve tensions in several problem areas, three new areas of collaboration were approved: Primatology, Biomedical Problems of Alcohol and Drug Abuse, and Human Immunodeficiency Virus (HIV) Infection, commonly known as AIDS.

During the Joint Committee meeting, agreement was reached on joint language concerning intellectual property rights as well as an affirmation to fully comply with the laws and regulations of both countries concerning the protection of human subjects and laboratory animal welfare. Other discussions focused on what could be done to encourage a broader range of exchanges, particularly those involving the exchange and training of young scientists for extended periods of time, and an expansion of activities outside of the two agreements. A more effective cooperation is also being sought in developing better access to both U.S. and Soviet biomedical literature.

In 1989, the National Institute of Mental Health participated in a State Department-led delegation visit to Soviet Psychiatric Hospitals for which there was an extraordinary degree of cooperation from the Ministry of Health. This may lead to resumption of cooperation in the mental health field some time in the future.

HHS Secretary, Dr. Louis Sullivan, has been invited to visit the Soviet Union and this trip is tentatively scheduled for April 12-22, 1990. The Department will host the next meeting of the U.S.-USSR Joint Health Committee at a date to be determined, probably in June, 1990.

All proposed exchanges and research with the Soviet Union must be reviewed and cleared in advance with the Department of State. Proposals are reviewed to assure they are consistent with U.S. policies on security, technology transfer, and trade. There is no apparent adverse environmental impact from this collaboration.

U.S.-U.S.S.R Agreement on Cooperation in the Field of Agriculture

The U.S.-U.S.S.R. Agreement on Cooperation in the Field of Agriculture was signed in June 1973 and renewed in 1978, 1983 and 1988. The U.S.S.R. Joint Committee, chaired at the Under Secretary-level, develops and authorizes activities under the Agreement. The current Soviet counterpart to the United States Department of Agriculture (USDA) is the State Commission on Food and Purchases.

On December 8-9, 1989, USDA Under Secretary for International Affairs and Commodity Programs, Richard T. Crowder, will lead the U.S. delegation to the 9th Session of the U.S.-U.S.S.R. Joint Committee on Cooperation in the Field of Agriculture in Moscow. The purpose of the meeting is to review past cooperation between the United States and Soviet Union in agriculture and confirm the current themes of cooperation, delegation exchanges, and arrangements for 1990-91.

Prior to the Joint Committee session, working group meetings will be held between U.S. and Soviet counterparts. There are currently three working groups: The Agricultural Economic Research and Information Working Group, chaired by USDA Deputy Under Secretary for International Affairs and Commodity Programs Ann M. Veneman; the Agricultural Research and Technological Developments Working Group, chaired by USDA Associate Administrator of the Cooperative Research Service, Dr. Clare I. Harris; and the Food Processing Working Group chaired by Assistant Secretary for Capital Goods, International Construction and Trade Development, Mr. Jon M. Huntsman. A fourth working group on forestry will be formed at this year's meeting.

In December 1989 the Joint Committee is expected to approve a program of work for 1990-1991 which includes trade-related exchanges such as: the evolving Soviet comparative advantage in agricultural trade; new commercial entities of the Soviet trade system which is under development; the market potential for processed/packaged foods and other high value products through direct contact with representatives of U.S.S.R. trade agencies and firms; and the economic aspects of cotton, fur, poultry, and vegetable oil industries.

U.S. scientific teams will visit the Soviet Union to study: Soviet state-of-the-art technology in animal husbandry practices to determine the prospects for supplying beef and dairy cattle semen and embryos, as well as swine genetics; weather and climate applications for agriculture; preserving reindeer ecological systems; enhancing and protecting water quality; germplasm exchanges for fruit and nut trees; and development of a joint plant genetic resource base. A joint publication on soil and water conservation will be produced.

4

US-USSR AGREEMENT ON COOPERATION IN OCEAN STUDIES

On December 13, 1989, American and Soviet representatives initialled an Agreement on Cooperation in Ocean Studies (more briefly, the "Ocean Studies Agreement"). If both American and Soviet governments approve the negotiated text, the new agreement should be ready for signing in early 1990, possibly at a meeting between Secretary of State Baker and Foreign Minister Shevardnadze scheduled for late January.

The National Oceanic and Atmospheric Administration in the Commerce Department is the U.S. Executive Agent for activities under the Agreement. The Soviet counterpart is the State Committee for Science and Technology.

The Ocean Studies Agreement is a continuation of the US-USSR World Ocean Agreement, signed by both nations in 1973 but inactive since the Soviet invasion of Afghanistan in 1979.

The first four projects under the new Agreement are expected to be on Southern Ocean dynamics, Mid-Atlantic ridge crest processes, geochemistry of North Pacific sediments, and Arctic erosional processes with special attention to gas hydrates.

A new feature of the Ocean Studies Agreement is the presence of an annex on protection of intellectual property rights that might be developed in the course of cooperative projects. It is not, however, anticipated that any such intellectual property will be created, since results of joint studies should be published in the open scientific literature.

Environmental item: In the joint project on gas hydrates in the Arctic, it should be noted that destabilized gas hydrates may become sources of atmospheric methane, a "greenhouse" gas. Recent reference: Poster sessions at AGU Fall Meeting, Dec. 4-8, 1989, reported in EOS for Oct. 24, 1989, pages 1151-1152.

5

PEACEFUL USES OF ATOMIC ENERGY

BACKGROUND:

5/8 June 1989

The Agreement for Scientific and Technical Cooperation in the Peaceful Uses of Atomic Energy (PUAE) was signed in June 1973, by President Nixon and General Secretary Brezhnev, and extended most recently in ~~May 1988~~. DOE acts as the Executive Secretariat for the U.S., with the State Committee for the Utilization of Atomic Energy (SCUAE) acting in the same capacity for the U.S.S.R. Collaboration under the Agreement is considered successful and of significant mutual benefit.

Since its inception the PUAE Agreement has provided a valuable framework for cooperation in research and development in the fields of magnetic confinement fusion and fundamental properties of matter. In May 1988, a new Memorandum of Cooperation in Civilian Reactor Safety was signed into force under the Agreement by the U.S./N.R.C. Chairman and the Chairman of the SCUAE. A very active program has evolved since that time, involving both NRC and DOE, covering ten areas related to safety and to the environmental consequences of the Chernobyl accident.

RECENT DEVELOPMENTS:

The PUAE Agreement has been updated and is in the final stages of review in preparation for a five year renewal. The Soviets have proposed and the U.S. is considering, renewal of the Agreement by President Bush and General Secretary Gorbachev during the projected Spring Summit 1990.

The Secretary of Energy has recently proposed a new initiative directed at enhancing the safe operation of existing U.S.S.R. nuclear facilities. The initiative focuses on assistance in "operational safety", including such elements as procedural support for operations, operator training and management oversight. Enhanced operational safety could reduce the probability of accidents like Chernobyl, and thereby reduce the threat to international energy security, human life and the environment. It is the Secretary's intent to utilize the services of the Institute of Nuclear Power Operators (INPO) to provide expert services for the effort. The initial Soviet reaction to the initiative is favorable.

Preliminary discussions are also underway on possible cooperation in nuclear waste management including information exchange on technologies and approaches used in waste handling, treatment and disposal, and as appropriate, encouraging and facilitating the improvement of waste related environmental standards in the Soviet Union.

Summary of Cooperation in Health Between
the U.S. Department of Health and Human Services
and the Ministry of Health of the U.S.S.R.
11/89

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Core Agreements:

1. U.S.-U.S.S.R. Agreement on Cooperation in the Field of Medical Science and Public Health. Signed May 23, 1972; extended for 5 years in 1977; extended for 5 years in 1982; was automatically renewed in May 1987, for an additional five years.
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Organization: A Joint Committee, co-chaired by the U.S. Assistant Secretary for Health and the U.S.S.R. Deputy Minister of Health, was formed to annually review the progress of cooperation. After a hiatus of seven years of high-level visits, the Eighth Joint Committee Meeting was held April 13-17, 1987, in Bethesda, Maryland, at the NIH campus. The Ninth meeting was held in Moscow, November 14-17, 1988. The Tenth meeting of the Joint Committee is scheduled to meet in Washington, at a date to be set, possibly June 1990.

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- A. Cardiopulmonary Diseases - Artificial Heart R&D
- B. Malignant Neoplasia
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workers and public health specialists of the two countries. As a result of close cooperation during 1988, and joint efforts to resolve tensions in several problem areas, three new areas of collaboration were approved: Primatology, Biomedical Problems of Alcohol and Drug Abuse, and Human Immunodeficiency Virus (HIV) Infection, commonly known as AIDS.

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HHS Secretary, Dr. Louis Sullivan, has been invited to visit the Soviet Union and this trip is tentatively scheduled for April 12-22, 1990. The Department will host the next meeting of the U.S.-USSR Joint Health Committee at a date to be determined, probably in June, 1990.

All proposed exchanges and research with the Soviet Union must be reviewed and cleared in advance with the Department of State. Proposals are reviewed to assure they are consistent with U.S. policies on security, technology transfer, and trade. There is no apparent adverse environmental impact from this collaboration.

Artificial Heart Research and Development

The study of the blood/materials interface in vivo and in vitro to improve biomaterials for circulatory devices is the primary goal of joint research under the US-USSR Agreement for Cooperation on Artificial Heart Research and Development. During FY 89, Soviet scientists continued joint research in the USA on physicochemical properties of blood compatible polymers and their interactions with blood components. These studies explore the hypothesis that the blood compatibility of polymers is governed by the fate of plasma proteins absorbed onto the surface of the polymer. Conformational alterations of the proteins, release of active fragments into the blood stream and provision of active sites on surface-retained proteins, lead to initiation of deleterious processes such as coagulation, platelet adhesion/aggregation and complement activation. The collaborating scientists have developed methods to favorably alter these events and study their course. It is anticipated that continued exchanges for work on polymers and polymer treatments will lead to improved blood compatibility of clinically significant materials and devices.

There are no environmental implications under this agreement.

7

Title: U.S.-U.S.S.R. Agreement on Cooperation in the Field of Housing and Other Construction

The U.S.-U.S.S.R. Agreement on Housing and Other Construction was signed in Moscow on June 28, 1974 by President Nixon and Chairman Kosygin. Every five years the Agreement is automatically renewed on its anniversary date unless either side gives six months notice of intention to terminate it. It was renewed in 1979 and 1984. While the third five-year term has been completed, the Agreement has been only temporarily extended pending the results of an on-going U.S. Government review of its activities. There was very little activity in 1989, with virtually all of it confined to Working Groups 10.01 and 10.04.

The major purpose of the Agreement is to encourage a mutually beneficial program of technical exchanges and seminars on various aspects of construction design, technology, and materials for housing, infrastructure, and urban development.

The Department of Housing and Urban Development (HUD) is the U.S. Executive Agency for the Agreement; the Soviet Executive Agency is the State Construction Committee (Gosstroy).

The six Working Groups establish technical work plans and supervise the development of projects. A listing of these Groups follows (the U.S. lead agency for each Group is indicated):

Working Group 10.01 - Building Design and Construction Technology (Public Buildings Service, General Services Administration/GSA);

Working Group 10.02 - Utility Systems (HUD/Office of Policy Development and Research-PD&R);

Working Group 10.03 - Building Materials and Components (HUD/Office of Housing-FHA);

Working Group 10.04 - Construction in Seismic Areas (National Science Foundation (NSF));

Working Group 10.05 - Construction under Extreme Climatic and Unusual Geological Condition (Department of the Army); and

Working Group 10.06 - Urban Planning, Development and Management (HUD/Office of Community Planning and Development-CPD).

DRAFT:HUD:JGERAGHTY
November 29, 1989

Tel.: 755-5770

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THE US-USSR AGREEMENT ON COOPERATION IN TRANSPORTATION SCIENCE AND TECHNOLOGY

The US-USSR Transportation Agreement was negotiated during 1986-1988 and signed at the May 1988 Summit in Moscow. Concluding an agreement was based primarily on strong recommendations of experts in both countries to resume bilateral technical cooperation on civil aviation air traffic control systems to meet predicted capacity/safety demands well into the next century.

The U.S. Department of Transportation and the Soviet State Committee on Science and Technology were named Executive Agents for the Agreement. Annex I of the Agreement established four (4) major areas for cooperation: civil aviation, railroad safety, highway bridge construction, and highway/traffic safety programs. Formal cooperation began in May 1989 at the First Session of the US-USSR Joint Committee on Transportation held in Washington. At that meeting plans were made for cooperative work in all areas listed in Annex I, except railroad safety. (Plans for exchanges in the rail area were held in Moscow in September 1989). It was agreed that the Second Session of the Joint Committee would be held in the Soviet Union at a mutually convenient period in 1990.

Meetings on civil aviation and railroad safety were held during September and November 1989 in Moscow. Excellent exchanges took place in an atmosphere of exceptional openness. Highlights are:

- **Accident investigation:** specialists from both sides were nominated to investigate accidents of nationally manufactured/owned aircraft on other party's territory, and Soviets supplied beneficial data on metallurgical stress measurement affecting engine compressor disc failure.
- **Air traffic control systems:** specialists agreed to carry out plans for cooperation and continue to conduct joint ATC studies to facilitate a transition to regionally and globally compatible systems.
- **Satellite technology and spectrum usage:** the Soviet side will provide a technical specifications document on GLONASS similar to the U.S. ICD-GPS-200, which was formally presented at the meeting. The Soviet side proposed: (a) establishing a joint group to develop performance standards for airborne equipment, and (b) developing a bilateral governmental agreement to meet the concerns of representatives of IATA, several states, and international organizations in the ICAO Future Air Navigation Committee, who have raised the question of providing guarantees for the use of GPS and GLONASS systems.
- **Railroad safety:** a schedule for exchanges on agreed topics was approved, and cooperation on high speed rail and two topics on railroad management (privatization) were proposed by the Soviets.

ANNEX III

AREAS OF COOPERATION
BASIC SCIENCE Agreement

1. Geosciences
2. Basic Scientific Research in Engineering Sciences
3. Scientific Problems of the Arctic and the North
4. Life Sciences
5. Science Policy
6. Chemistry
7. Mathematics
8. Theoretical Physics

ANNEX II

AREAS AND TOPICS
FOR COOPERATION IN THE FIELD OF BASIC SCIENTIFIC RESEARCH
BETWEEN

THE NATIONAL SCIENCE FOUNDATION
OF THE UNITED STATES OF AMERICA

AND

THE ACADEMY OF SCIENCES
OF THE UNION OF SOVIET SOCIALIST REPUBLICS

1. MATHEMATICS

- o Complex analysis
- o Geometry (differential, algebraic, and topology)
- o String theory
- o Differential equations
- o Algebraic structures
- o Representation theory
- o Control theory
- o Dynamical systems
- o Algebra
- o Mathematical physics

2. THEORETICAL PHYSICS

- o Theoretical nuclear physics
- o Relativistic astrophysics
- o Mathematical physics
- o Theoretical atomic, molecular, optical, and plasma physics
- o Cosmic ray physics
- o Condensed matter theory
- o Cosmology

3. SCIENTIFIC PROBLEMS OF THE ARCTIC AND THE NORTH

- o Global biogeochemical cycles
- o Permafrost studies related to world climate change
- o Studies of the magnetospheric cusp

4. GEOSCIENCES

- o Global change
- o Global biogeochemical cycles
- o Regional geology, stratigraphy, and tectonics
- o Paleontology and geochronology
- o Magmatic and metamorphic processes
- o Volcanoes and volcanic processes
- o Paleoclimate and climate change
- o Surficial processes and geomorphology
- o Continental lithospheric seismology, geophysics, and geochemistry
- o Seismic risk and earthquake prediction
- o Continental scientific drilling
- o Physical and chemical properties of the earth's interior
- o Upper mantle studies

5. CHEMISTRY

- o Molecular environmental catalysis
- o Bioelectrochemistry of membranes

6. LIFE SCIENCES

- o Plant biology (flowering research)
- o Cell biology
- o General and cellular physiology
- o Biodiversity
- o Ecology
- o Protein polymorphisms and other molecular-genetic markers in domesticated plants and animals
- o Developmental biology
- o Neurochemistry

7. BASIC RESEARCH IN ENGINEERING SCIENCES

- o Thermal engineering (heat and mass transfer)

8. SCIENCE POLICY

- o Exchange of information on R&D funding, R&D personnel, and R&D policy.

ANNEX II

LIST OF TOPICS FOR COOPERATION IN GEOSCIENCE RESEARCH

USGS MOU

1. Regional geology, stratigraphy, and tectonics
2. Paleontology and geochronology
3. Magmatic and metamorphic processes
4. Volcanoes and Volcanic processes
5. Mineralogy
6. Marine geology, geochemistry, and geophysics
7. Mineral resources
8. Energy resources
9. Water resources
10. Paleoclimate and climate change
11. Surficial processes and geomorphology
12. Continental lithospheric seismology, geochemistry, and geophysics
13. Seismic risk and earthquake prediction
14. Continental scientific drilling
15. Deep earth physical and chemical processes
16. Global change

9

U.S.-USSR Agreement On Cooperation in the Field of Basic Scientific Research

OSTP is Executive Agent.

The agreement consists of a framework and two implementing Memoranda of Understanding (MOUs). The framework was signed on January 8, 1989. The MOUs are between:

National Science Foundation (NSF) - Soviet Academy of Sciences

U.S. Geological Survey (USGS) - Soviet Ministry of Geology

The agreement covers basic science. It establishes eight broad areas of cooperation (attached). The NSF MOU lists 45 more specific topics and the USGS MOU lists 16 topics (attached).

The framework also established a Joint Commission to: review, coordinate, and facilitate cooperation; and, consider and recommend changes to the areas of cooperation. The Joint Commission would likely meet once a year alternately in the U.S. and USSR. The agreement calls for Executive Agents, OSTP and GKNT, to assist the Joint Commission by designating Co-Chairpersons. State could be the Executive Secretary for OSTP, if desired.

As Executive Agent, OSTP will be expected to head the U.S. delegation to the Joint Commission meetings.



Summary of Agreement Between NIST and USSR

Agencies Included:

1. National Institute of Standards and Technology (NIST)
2. USSR Academy of Sciences

Areas of Cooperation: Physical, Chemical, and Engineering Sciences.

Methods of Cooperation: Exchange of scientists and information, joint meetings/seminars, and joint research projects.

The common theme of these cooperative activities is measurement and the scientific research that underlies it. Effective and improved measurement (worldwide) is a critical element in achieving advanced technology, industrial quality control, and environmental protection.

Examples of recent topics:

- Standard reference data in chemical thermodynamics and thermal chemistry
- Advanced spectroscopic studies (atomic & molecular physics)
- Wear of alloy coatings, wear and debris particles, and data on wear of polymers (tribology)
- High temperature chemistry
- Laser spectroscopy and photo chemistry
- Electromagnetic fields measurement, non-ionizing radiation
- Crystallography

US-Soviet Basic Sciences Agreement of 1989

History and Background

- In discussions leading to formal negotiations, the Soviets wanted the 1989 agreement to be a direct successor to the 1972 US-Soviet Science and Technology agreement which was allowed to expire after the Soviet shoot down of the Korean Airline KAL-007 in 1983.
- However, because the 1972 Agreement produced one-sided S and T benefits (in Soviet favor) and allowed the Soviet side to gain unintended access to sensitive and/or advanced U.S. technology, the U.S. clearly established, in negotiating the new agreement in 1987-88, that such an agreement was to provide for demonstrable mutual benefit and to focus on basic research cooperation; by eliminating applied research, the current agreement is designed to avoid undesired and unwanted technology transfer.
- To this end, the NSC mandated in March 1988 that all US-Soviet S and T cooperative activities are to be subject to USG interagency review.
- To implement this goal, the NSC approved in September 1988, the current interagency review procedures; developed by an interagency task force, these govern all bilateral S&T activities with the USSR and East Europe, including the US-Soviet Basic Sciences Agreement;
- The latter was negotiated by a USG interagency delegation in 1988 and signed in January 1989 by Secretary of State Schultz and Foreign Affairs Minister Shevardnadze.

Current Policies and Procedures

- To differentiate the 1989 Basic Sciences Agreement from the expired 1972 S&T Agreement, the current Agreement not only excludes applied research activities, but calls for a "bottom-up" approach, i.e., proposals are to be initiated by U.S. and Soviet working scientists, as opposed to those negotiated and "imposed" from the top under the 1972 Agreement (by the 11 Working Groups under the then Joint Commission).
- To implement the current decentralized approach, USG Technical Agencies are authorized to work out MOU's with their Soviet counterparts and, under these "sub-agreements," to encourage their scientists to develop joint basic research projects, subject to the interagency review process noted earlier.

- To date, NSF and USGS have developed such MOU's with the USSR Academy of Sciences and the Soviet Ministry of Geology;
- These USG technical agencies are slated to report on their experience to date to the first meeting of the new Joint Commission under the Basic Sciences Agreement, scheduled to be held in Washington on April 19-20, 1990.

(Drafted by John R. Thomas, DTSA/TCS, 2 April 1990)

US-USSR CIVIL SPACE COOPERATION

General Status

- o The US/USSR Agreement on Cooperation in Space Science concluded April 15, 1987, and amended May 31, 1988, establishes Joint Working Groups (JWGs) in five areas. All have met at least twice:
 - Solar System Exploration
 - Space Astronomy & Astrophysics
 - Solar-Terrestrial Physics
 - Earth Sciences
 - Space Biology and Medicine
- o 16 specific joint projects, covering the five disciplines listed above, are provided for in the Annex to the 1987 Space Agreement. Additional joint projects may be added to the Annex by mutual agreement.
- o Two items were added to the annex at the Moscow Summit in May, 1988: exchange of flight opportunities for scientific instruments on each other's spacecraft and exchange of results of independent national studies of future unmanned solar system exploration missions. The latter involve a solar probe, Mercury orbiter, Mars Rover/Sample Return, and lunar orbiters/lunar outpost.

Specific Bilateral Activities Already in Progress

- o Mars Observer Communications Relay for USSR's 1994 Mars Balloon Mission: NASA has accepted in principle a Soviet proposal to fly a Soviet or French transponder on Mars Observer to enable the US mission to serve as a communications relay for the planned 1994 Soviet Mars balloon mission.
- o DSN Tracking of the Phobos Landers: NASA provided Deep Space Network position tracking of the Phobos landers, and US scientists participated on Phobos science teams. Although communication with Phobos-1 and Phobos-2 was lost, scientific evaluation of Phobos data continues.
- o NASA Participation in Cosmos Biosat Mission: 27 US experiments were conducted in connection with the Soviet Cosmos 1887 biosatellite mission (Sept.-Oct. 1987). Discussions are underway to include NASA science experiments on the next USSR biosat missions in 1989 and 1991.
- o U.S. Total Ozone Mapping Spectrometer (TOMS) on a Soviet Meteor-3 Spacecraft: We are discussing the feasibility of flying a TOMS on a Soviet Meteor-3 spacecraft in 1990-91. The objective of this project would be to continue the availability of global ozone data.