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BRIEFING BOOK

**US-USSR BASIC SCIENCES AGREEMENT
SECOND JOINT COMMISSION MEETING**

MAY 13-14, 1991

MOSCOW, USSR

July 12, 1991

TO: John O'Neil ✓
John Thomas
Gerson Sher
Paul Hearn

FROM: Cathy Campbell *Cathy*

SUBJECT: BSA JCM Trip Report

I finally have managed to put together a report on our trip to the USSR. Please feel free to edit, correct, or suggest additions or deletions. I will be out next week (July 15-19), but will be ready to get back to this as soon as I return.

A few comments --

-- I've indicated in the text or margins several questions that deal mostly with figures or unclear notes.

-- My notes on the working session in Novosibirsk are very sketchy because I was in and out of the session all afternoon. I'd appreciate anything you can add to that section.

-- I have nothing on the visit to the two nuclear physics institutes in Novosibirsk. Can you provide something?

-- I added a couple pages of notes on logistics. These are intended to provide a record so that we have something to refer to next year when we start asking ourselves questions such as "Whom did the Soviets send to meet the delegation at the airport?" Anything anyone wants to add?

-- I've attached notes received from NSF, NIH, and DOD. John and Gerson, do you mind if I attached your reports? Gerson, do you have a final version of your report?

-- My report does not include impressions. Do we want to add something along these lines?

BASIC SCIENCES JOINT COMMISSION MEETING
MAY 13-14, 1991

TRIP REPORT

Joint Commission Meeting

Introduction

Academician Laverov and Dr. Bromley opened the meeting on Monday, May 13, 1991, with brief opening remarks and introductions of their respective delegations. In his opening remarks, Dr. Bromley congratulated Academicians Laverov and Osipyan for their recent appointments and promotions; and expressed condolences for the death of Alexander Kamenskiy. He also expressed pleasure with the accomplishments attained thus far under the Agreement, but speculated that the sides had only begun to scratch the surface of available opportunities. He also emphasized the importance of the "bottom-up" approach adopted under this agreement, characterizing it as the most productive approach for cooperation.

Science Policy

Turning first to a discussion of science policy, Academician Laverov began by highlighting some of the key issues currently facing Soviet S&T policymakers. One is the need to ensure stronger support for fundamental research. This involves providing legislative support of scientific activity; funding; and the necessary infrastructure including, for example, social services related to science and information support. Laverov briefly discussed the All-Union Foundation for Fundamental Science, noting that the Soviets are in the process of forming its Council. The money for the All-Union Foundations comes from the state budget (3 billion rubles for 1991). The Foundation also is expected to receive funding from enterprises. The funds will then be distributed to the academies of sciences and universities; approximately 15% will go for competitive grants.

Laverov mentioned the need to introduce a contract system in the fundamental sciences (the Soviets have drafted a law to this effect). He noted that the Soviets must keep branch institutes involved in fundamental research (he noted that the state programs budget continues to increase -- about 650 million rubles were allocated this year, which is about twice the amount allocated last year). Fundamental research of the academies of sciences has been supported through S&T programs -- which have increased over the last 5 years -- but still the Soviets lack sufficient resources. Laverov also noted that the Soviets are increasing attention to

the humanities (an effort to be led by Academician Osipyan).

Another source of funding is the so-called "Back-up Fund" for international programs. This fund is intended to provide additional stimulus for international cooperation.

Turning to the state priority programs, Laverov noted that during the first stage (1988) the government approved 14 programs. Recently the Soviets added new programs bringing the total now to 18. The programs are administered by a scientific-technical council which ensures cooperation on a competitive basis. Projects are approved by GKNT resolution; financing goes directly to those doing the work.

Laverov then listed four S&T related laws pending in the Supreme Soviets: 1) resolution on the Academy of Sciences; 2) draft law on IPR; 3) draft industrial property law; and 4) draft law on State S&T policies. The Soviets have also prepared draft laws on the state of scientific workers and contracts. The Academy of Sciences, said Laverov, is an all-union self-governing organization functioning on USSR laws and the laws of the Academy of Sciences. On the IPR law, Laverov noted that the new law will establish rights for all scientific activities. The law hopefully will be adopted in the Fall by the Supreme Soviet.

On center-republic relations, Laverov said that the Soviets face a danger of a brain drain and, therefore, the center and republics need to resolve their differences. The division of sciences along republic borders will break contacts among scientists and localize science too much. The Soviets need to have the center focus attention on priority programs and on providing a legal framework for S&T activities. Laverov emphasized the need to raise the level of education and fundamental studies, and remove the isolation of academy institutes from university facilities. The Soviets also are looking to support new forms of cooperation, including for example industrial centers in regions such as Zelenograd and Novosibirsk.

Dr. Bromley began his remarks on U.S. science policy by noting that support of research in the U.S. is split roughly equally between government and the private sector (each spend about \$75 billion). Eighty percent of basic research is conducted in universities. Two organizations, NSF and NIH, support about 80% of that research; the rest is supported by approximately 20 federal agencies, including, for example, DOE, NASA, DOT, EPA, etc.

The coordination of this research occurs in the agencies themselves and in the White House. Problems that cannot be resolved at the agency level boil up to the White House, specifically to the Office of Science and Technology Policy.

Dr. Bromley then described two structures used for coordination: the FCCSET and PCAST. The FCCSET provides a forum for all agencies to meet and discuss problems. Its purpose is to integrate programs from different agencies and create a national program. The FCCSET is very active now. Previously, FCCSET did not work because it was too low-level. Now its representatives include the most senior levels in government.

The problem with FCCSET is that by law all its members must be employees of the federal government. This creates a situation where the FCCSET is isolated from industry. Therefore, in an effort to involve representatives from industry, the President created a President's Council of Advisers on Science and Technology (PCAST). It consists of thirteen people and reports directly to the President. PCAST meets once a month, with the President, and tends to hold very open discussions on key issues where industry input is necessary. PCAST can put together panels to discuss key topics, such as global change; materials science). Dr. Bromley chairs both the FCCSET and PCAST and serves as the link between the two organizations.

Turning next to budget issues, Dr. Bromley noted that the highest priority right now is to remove the budget deficit. He explained that we have divided the budget into 4 groups: entitlements; military; international; and domestic discretionary. A cap has been set on all categories, and for the next three year, we face a zero sum game in constant dollars. This means that to add a new program, we must eliminate an existing program. For the next fiscal year, President Bush has asked for a 13% increase in the science budget and an 8% increase in basic research (however, this means that we must cut spending from some other program). This increase represents the President's belief that we are underinvesting in science and technology.

Dr. Bromley then discussed several Presidential initiatives. The first is in the area of global change. The president has asked for \$1.2 billion for next year (a 74% increase). Another is in high performance computing and communications. This program is intended to ensure maintenance of leadership in the development of high performance computer; increase the speed, capacity and transmission capacity between factors of 100 to 1000 (within the next 5 years); make power available to large sector of the public, including homes and school, which will require fiber optic links; and train large numbers of people to operate this system. Dr. Bromley noted that the U.S. has requested 30% increase in funding this year; and we hope to double that within the next five years. The third initiative is in math and science education. Dr. Bromley noted that the U.S. has a serious problem, particularly at the pre-college level. This will require a 28% increase in budget expenditures to improve teacher training and develop standards.

Dr. Bromley added that we will add two initiatives next year in materials science and technology and biotechnology. These programs involve up to 20 agencies. We will work to adjust agency programs to produce a coordinated national policy and avoid duplication.

Turning next to the U.S. industrial base, Dr. Bromley noted that the US and USSR share defense conversion problems. He also listed several reports released this year, including the US Technology Policy and the just-released Critical Technologies Report. The Critical Technologies panel was a joint private/government panel established to select less than 30 technologies considered critically important to our national security and economic competitiveness. The government has been working with industry to develop "generic technologies" to share risk, cost and time in developing new technologies. We also are putting together a Critical Technologies Institute to do long-term strategic planning as follow-up to the report.

Dr. Bromley continued, noting that another issue we face relates to balancing support for individual investigators -- still the backbone of our support -- and megaprojects. Recently, he said, the balance has been tilted in favor of the long-term projects. He noted that the big vs. little science relationship is often misunderstood. For example, much of the work in the human genome area or on telescopes is done by scientists or a group of scientists. In particular, physics and cosmology now involve the contribution of hundreds of people. However, many scientific problems are so large that no country can do it alone. What we've done in the past, however, is not true international cooperation. We tend to talk to our international counterparts only after projects are well into the planning process. Maybe we should consider a treaty

arrangement for the life of a project rather than yearly agreements.

In closing, Dr. Bromley said that the most important challenge in the US is to restructure the US education system. Although the primary responsibility lies at the state and local levels, the federal government has a major catalytic role to play in this process.

Discussion:

In the question and answer period, Dr. Bromley asked about the impact of the development of independent S&T organizations in the republics. Laverov responded that within the USSR government they have created a special Department for the Development of Small Enterprises, under the Ministry of the Economy, to regulate the activities of such independent organizations. These organizations can participate in international cooperation through either their own or GKNT financing. Academician Marchuk interjected that the new openness allows Soviet organizations to cooperate better (and to remove the isolation of the Academy from industry). He announced plans to create an international foundation for support of basic sciences. Dr. Bromley responded that this may be a good idea, but added that the outlook for US financial support is not good. He also suggested that such a center would require a good system of merit review. Marchuk responded that the Academy is ready, and hopes that the GKNT will support working on this idea. He added that recently all the republic academies supported this idea.

In response to a question from Yezhkov regarding where scientific cooperation turns into competition, Dr. Bromley said that the best example is Japan. Under MITI, cooperation is funded up to the point where it is accessible to the market.?

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Reports on Ongoing Cooperation

MOU in Geosciences. Doyle Frederick reported on cooperation conducted under the USGS-Ministry of Geology MOU. Since they signed the MOU two years ago, the two sides have approved 27 projects. In 1990 approximately 133 man days of exchange visits were made by USGS and Soviet scientists. Cooperative projects with the Ministry of Geology comprised 60 percent of the total; projects with the Academy comprised the remaining 40 percent. Currently, USGS and the Ministry are engaged in 8 projects in the areas of energy resource assessments; mineral resources; deep continental drilling; water resources; and global change research on Lake Baikal.

In response, Anatoliy Krivtsov reiterated the U.S. side's favorable assessment of cooperation under the MOU. He cited as the most important projects a study on the geology of Alaska and the Soviet Far East; development of a unified classification of petroleum resources and reserves; earthquake prediction; deep drilling; and the visit of Soviet students interested in geology. Krivtsov also noted that beginning in September the two sides will have an expedition to the Kola Hole.

NSF - Academy of Sciences MOU. Academician Osipyan opened by applauding the expansion of the agreement and MOU to include experimental physics. He very briefly mentioned some of the work ongoing in the field of solid state physics (with UC Berkeley); the introduction of chrome to improve the quality of superconducting materials; mathematics; chemistry; and the SSC (Osipyan noted that the Soviets may contribute to the coils and construction of detectors). Regarding Dr. Bromley's comments on math and science education, Academician Osipyan noted that the Soviets have experience attracting talented youth involved in math and physics resources. Academician Osipyan also addressed the "brain drain" noting that the Soviets are suffering many losses as talented scientists move to the U.S. He suggested that the Soviets need to allow lengthy (multi-year) research assignments abroad.

In his report on the MOU, Dr. Bernthal, NSF, began by stressing the success of the "bottom up" approach incorporated in the MOU. Since they signed the MOU, the sides have jointly approved 45 projects. Dr. Bernthal noted that the acceptance rate for joint projects is higher than average at NSF. On the expansion of the MOU, Dr. Bernthal stressed that it should extend to all organizations involved in the MOU, including the State Committee for Education. He also emphasized that NSF is interested in engaging Soviet scientists from all states and republics, as well as young scientists.

Proposal to Amend the Basic Sciences Agreement. In very brief comments on the proposed amendments, both Dr. Bromley and Academician Laverov applauded the proposal as a positive step forward toward expanding the cooperation.

Dr. Bromley took the opportunity to raise for consideration by the sides several issues affecting the long-term relationship. First, he asked, what profile do the sides want to see in US-Soviet S&T cooperation in the next five to ten years? Second, he raised the issue of cooperation in megaprojects, such as the International Lab at the Kola Hole and SSC. In the U.S., until now, we have tended to develop projects and then attempt to bring in foreign partners. Perhaps the time has come for this particular group to begin discussing new projects for the

future. We need to determine together what is needed; where it is to be placed; how is it to be funded. Such an effort would break new ground in international cooperation, with our two countries taking the lead. Dr. Bromley emphasized that this is "just an idea for future discussion," adding that he is not proposing any specific action at this time.

Finally, Dr. Bromley raised the issue of future US-Soviet cooperation in the intermediate term (2-3 years). He suggested that it is important to focus more on the development of a framework that is broader than this agreement, including new areas/programs and activities. Second, he also proposed that we should focus on the removal of impediments to effective cooperation that occur on both sides, for example, IPR, visas, travel difficulties, etc. He proposed considering these issues together and openly to improve the cooperation. Finally, he noted that in 18 months we will begin to negotiate an extension of the Basic Sciences Agreement. He suggested that now is not too early to think about the follow-on agreement. For example, do we need a broader umbrella to subsume the many already existing agreements. Everyone here has discussed the importance of scientists-to-scientist contacts. We have a responsibility to develop mechanisms to strengthen that part of our cooperation, that is, to facilitate cooperation.

In response, Academician Laverov agreed that these are very significant issues and that the responsibilities of the two sides is to look forward and create favorable conditions to establish individual contacts. He expressed satisfaction with Dr. Bromley's "proposal" on megaprojects such as SSC, and suggested that the Soviets in the future will be including more big science projects along with the small projects. He also concurred that this group should work to facilitate cooperation; but that in terms of some of the problems that exist, the Commission could only serve as an advisory body. He suggested that they prepare some proposals for discussion at the next session.

Laverov went on to say that the influence of the union government will continue to be strong, adding that the union has a sufficient science budget. The republics understand that they can ~~solve~~ megaprojects only through cooperation. The same is true for defense and international affairs. Regarding IPR, Laverov said that a law on IPR, similar to the U.S. law, will be adopted this year. In 1992 we should eliminate the obstacles hindering cooperation on a legal basis.

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On travel inside the USSR, Laverov said that the problems raised by the U.S. are all solvable issues, adding that there is no need to adopt a new decision here regarding financial arrangements. Regarding the changes to the agreement, with current conditions, the agreement is quite good. There are no obstacles to developing contacts throughout the USSR, for example, at Lake Baikal, and in the republics. Regarding personal contacts, Laverov said that he shares Dr. Bromley's opinion that we need to facilitate cooperation. We need to prepare a report on what's needed for our scientists to work in U.S. labs and vice versa. He agrees with Marchuk regarding the need to development international schools.

Bromley responded by agreeing to prepare material for discussion at next year's meeting. He added that there is concern in the U.S. that it will be difficult in the next few years to support scientific cooperation because of the budget deficit. He suggested that we need to keep in mind that both sides will be working under difficult financial conditions.

Report on ODP. Mr. James Baker provided a brief history of the ocean drilling program, which dates back to 1968. The work to be done on the current ship, which includes a major laboratory, includes studies in fluid circulation in the Earth's crust; development of engineering techniques; and diamond coring systems. He noted that the U.S. looks forward to the new Soviet drilling ship. Oleg Bogatykov, USSR Academy of Sciences, responded that this program is important because the Soviets lack ships for deep drilling. The new ship is expected to be ready only in 1993 or 1994.

Regarding university participation in the NSF-Academy MOU, Valentin Shukshunov proposed adding "education" to the social sciences area of cooperation. DR. Bernthal responded that the U.S. will take his proposal under consideration upon return to the U.S.

(Laverov recommended that the Joint Commission not discuss the changes to the NSF-Academy MOU because Academician Osipyan was forced to leave the meeting; likewise he suggested that the Commission not discuss the NIST-Academy MOU since it was signed at a special meeting at the Academy the previous day).

USGS-Committee on Geodesy and Cartography MOU. Doyle Frederick briefly described the contacts made over the last two years leading to the conclusion of this MOU. He briefly reviewed the six topics covered under the MOU. Academician Laverov interjected that the proposed work is significant for global change issues. Yuriy Kiyenko, Committee for Geodesy and Cartography, expressed satisfaction that the sides were going to sign this document. He said the sides hoped to employ satellites to collect information for cartography, and hopefully

also to use the information to predict seismic activity. Special sites will be selected in the US and USSR. He suggested that after signing the MOU, the sides begin deliberating on specific projects -- he proposed a meeting of specialists in July and also in December to discuss specific work. Actual project work might then begin in 1992.

Discussions on possible biomedical cooperation. Dr. Schambra, NIH, described the series of meetings/ discussion held since the last JCM. He noted that as a result of the Soviet Academy of Sciences visit to NIH in February, the sides agreed to begin cooperation through already existing exchange programs. The areas include eye; neurological; and kidney diseases. Dr. Schambra noted that NIH currently has 17 Soviet scientists working in its facilities. He concluded by noting that a basis exists for developing an MOU, adding that he hopes to begin discussing a draft soon and have it ready for signature at the next JCM, if not sooner.

Petrov responded by noting that the visit in February was very good. As general principles for possible cooperation, Petrov mentioned the importance of establishing personal contacts between scientists; the importance of opening cooperation to make it flexible and to remove impediments. It should operate as a "two-way bridge."

Organizational and Policy Issues

Dr. Bromley opened by noting that the cooperation is proceeding well. However, since the role of the JC is to facilitate cooperation, he raised two issues. The first is that US scientists visiting the Soviet Union, even on a receiving side pays basis, sometimes have to make their arrangements and pay hard currency. Second is the problem of Aeroflot and the difficulty Soviet scientists have in securing reserved seats to arrive in the U.S. on the planned arrival date. Dr. Bromley emphasized that the U.S. side recognizes that these are not problems created by the Soviet science community, but nevertheless wishes to voice its concern. Dr. Bromley then invited the Soviet side to raise any problems that Soviet scientists have had in the U.S. Miss

Laverov responded by lamenting the current "service" sector in the USSR. He said that they are aware of the problems and promised to do everything possible to correct them, adding that the Soviets are "very uncomfortable" about the situation. He expressed optimism that these problems will be corrected and suggested that they should not adversely affect cooperation in the future.

On organization issues, Dr. Bromley suggested that the sides agree to increase the membership of the Joint Commission from 15-18 to cover the new MOUs. Laverov responded that the Soviet side had no objections to the proposal.

On the next session, Dr. Bromley invited the Joint Commission to meet in the U.S. at approximately the same time next year, probably in Washington. Academician Laverov accepted, adding that he does not want to see more than one year elapse between sessions.

Dr. Yezhkov said that he wanted the attachments to include the remarks (on science policy?) and proposals for future cooperation.

Closing Remarks

Academician Laverov began by thanking Dr. Ratchford, Col. O'Neil, Dr. Thomas, and Dr. Yezhkov for the work done in preparing for this session during Dr. Ratchford's trip to the USSR in September. He noted also that Dr. Bromley's presentation left a very good impression, especially his discussion of long term plans. He added that the approach of the Presidential initiatives fits very well with what the Soviets want to do. He stressed the desire to select large projects to arrange large scale investigations. He concurred that we need to look ahead 2/3 and even 5/10 years.

Academician Laverov also expressed satisfaction with the various documents signed today. He thanked the executive secretaries; US embassy staffers Adrienne Stefan, Eric Green and Bob Clark (noting that it was very appropriate that Bob Clarke participated in this meeting). He said the Soviets looked forward to implementing the work accomplished here and he wished success to everyone who will be involved.

Dr. Bromley agreed that this was a very successful meeting. The U.S. was interested to learn that the Soviets are facing many of the same broad issues that the U.S. faces. He noted that we can increase the flow of information through cooperation and look forward to work in areas where we have complementary abilities. The U.S. looks forward to learning from the Soviets on primary and secondary education, particularly in math and the sciences. The U.S. and USSR have a responsibility for leadership; we need to demonstrate to the world how to cooperate better for the benefit of all mankind. In science we can demonstrate this by cooperating in coming years in large projects. The time has come to use new methods to develop new international programs; facilities, beginning early to discuss programmatic approach and sites. We must work together early in the planning stage.

Dr. Bromley noted that we have heard some exciting reports and results. We welcome the ODP cooperation with great pleasure. He thanked the Soviets for their warm and generous hospitality. He observed a real spirit of cooperation and sense of humor. He closed by noting that we have already begun to plan next year's meeting, adding that he is certain that we will have new areas of cooperation by then. He thanked the Soviets for their efforts in arranging the visits to Novosibirsk and Baikonur -- adding that he hopes we can reciprocate next year.

SESCTA 5603

Reporting Cables:

Moscow 14025	May 21, 1991	SUBJ: Bromley/Ryzhov Mtg (C)
Moscow 14526	May 28, 1991	SUBJ: Bromley/Dzasokhov Mtg (U)
Moscow 14591	May 28, 1991	SUBJ: Baikonur Trip (LOU)
Moscow 14639	May 29, 1991	SUBJ: Bromley/Marchuk Mtg (U)
Moscow 14757	May 30, 1991	SUBJ: Novosibirsk Trip (LOU)
Moscow 16185	June 11, 1991	SUBJ: Bromley/RSFSR Mtg (C)

Attachments:

Logistics Notes (Campbell)
Notes on meetings in Novosibirsk (Campbell)
NIH Trip Report (Stepanian)
Conversion Report (Thomas)
NSF Trip Report (Sher)

Documents signed

LOGISTICS NOTES

-- After some back and forth, Soviets ended up paying for cost (hotel, meals, internal city transportation) of entire delegation for period May 11 - 18 (which corresponded with Bromley's stay in USSR). It was sending side pays before and after that period.

-- Soviets paid entire cost (include airfare) of site visit to Baikonur (Bromley, Ratchford, O'Neil, Boright, Campbell, Herzfeld, Thomas, Sinnott, Green? - who paid for him³). ?

-- US delegation paid for visit to Novosibirsk (May 15-16). Soviets told us prior to our arrival in USSR that airfare to Novosibirsk would be approximately \$150 USD and cost of hotel and meals for the stay in Novosibirsk would be another \$150 USD. When we went to pay for airline tickets, we learned that the total cost was \$311 USD. When we arrived in Novosibirsk, the Soviets tried to collect \$150 per day for 2 days, despite the fact that we were spending only one night in Novosibirsk (we later learned that the ruble charge for the rooms in the Golden Valley Hotel was 25 rubles). We told the Soviets we did not have the money with us -- they relented and charged us \$150. We had to pay in cash for the airline ticket, and cash or dollar travellers checks for the hotel.

-- One delegation member, George Sinnott, NIST, had purchased an open ticket for a round-trip flight to Novosibirsk in the US before departure. This turned out to be the best approach, as he was the only delegation member for whom it was not difficult to purchase the ticket (reservations had been made by GKNT).

-- Dr. Bromley and a few others stayed in a guest house in Lenin Hills. The accommodations were superb. The remaining delegation stayed in the Hotel Mir, across from the Embassy (the old COMECON building). The rooms were very pleasant, and the location ideal for access to the embassy. We were charged approximately \$140 per night, plus tax, and were able to pay with credit card. The Mir has a restaurant as well as a snack bar. It also has a money exchange booth on the first floor.

-- In Novosibirsk Dr. Bromley and a few others stayed in a guest house. They also were charged \$150 for their stay in Novosibirsk.

-- The Soviets met us at the airport and saw us off at departure. We used the diplomatic hall on both occasions (did those departing the USSR at times other than Dr. Bromley receive the same courtesy?). Dr. Yezhkov greeted the Bromley group on arrival; Academician Laverov saw Dr. Bromley off on the 18th (at 5:00 A.M.).

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-- The Soviets had cars available to the delegation during the time period May 11-18th.

-- GKNT failed to arrange site visits requested by those not accompanying Dr. Bromley on his site visits. What was achieved (Sverdlovsk (for O'Neil and Thomas); Dmitrovgrad (for Schriesheim); and appointments in Moscow for Wince-Smith and White) were achieved through last-minute efforts by the embassy or by delegation members dealing directly with Soviet counterparts. * *Sinnot^W told he could not go to Turkey - "not enough time allowed for arrangements" (HS said it needs several months leadtime)*

VISIT TO NOVOSIBIRSK
MAY 15-16, 1991

On May 15-16 the U.S. delegation (Dr. Bromley, Dr. Ratchford, Col. O'Neil, Dr. Bernthal, Dr. Sher, Dr. Sinnott, Dr. Herzfeld, Dr. Boright, and Ms. Campbell) visited the headquarters of the Siberian Branch of the USSR Academy of Sciences in Akademgorodok (Academic City). (At the opening session the US delegation met with Dobretsov, Logachev, Yershov, Kudryshev, Yermakov, and Osipkov?.) The Siberian Division includes 70 research institutes (out of 270 in the USSR Academy), and constitutes approximately 20% of the total Academy "potential" (compared with Moscow, which comprises 50%; Leningrad - 15%; and "others" - 15%). The number of employees of the Siberian Division totals 53,000, including more than 1,000 PhD's.

The Siberian Division consists of a number of centers in addition to that at Akademgorodok (including, for example, centers in Tomsk and Yakutsk). The focus of work at each of these centers depends on the specific region. One of the goals of the Siberian Branch is to search for interdisciplinary contacts. Scientific councils, corresponding to the basic sciences (for example, biology, mathematics, theoretical and experimental physics) were created to allow the Siberian division to better coordinate and integrate research and development. A related effort underway in Siberia to ensure better coordination is the creation of international scientific centers, for example, the Baikal International Research Center. Another objective of the Division is the organization of applied research involving close cooperation with industry. The Siberian Branch has organized experimental plants and has allowed institutes to have special agreements with companies to perform research and development. Some institutes receive 40-50% of their budget from industry (in Moscow, the general figure is 10%). As an example, a new technopark has been created in Tomsk. Finally, the Siberian Division is working to support new forms of education. A majority of professors in Novosibirsk University work in Akademgorodok institutes. Recently, Novosibirsk University started a two-stage program of graduate and post-graduate work.

Professor Vaskov discussed the new technological associations that have been formed to conduct primarily applied work. Fifty percent of their financing comes from industry. He added that the main challenge is to create favorable conditions to develop venture organizations and innovation companies. The Siberians need credits, loans, tax benefits to maintain services needed for business opportunities, including marketing. These associations intend to participate in both republic and union programs and, above all, to focus on regional needs. The work priorities will be determined by the market.

In response to a question from the US delegation (FMB) regarding market determination, Vlaskov said that currently they do marketing surveys to try to focus on the most promising market opportunities.

Next, Professor Yuriy L. Yershov talked about the university located in Novosibirsk, which was established in 1959 to prepare students for research in academy institutes. Thus, two major features have evolved -- practically all professors have positions in institutes and students can participate in research up to the second year, but they have to do research in the last two years. The university established its own programs, not those of the Ministry of Education; the scientific council in the university includes Academicians.

Yershov talked about exchanges with foreign universities. He said they have broad international ties but there is room for much more (they are hindered by lack of dormitory/housing space). They are forming (have formed?) with Stanford University a two-week student exchange program. He argued for longer exchanges, adding that they should be easier to arrange in the current environment when the "formalities" associated with such arrangements have been reduced. The level and quality of university training is high; the approach is to condense courses in the first three or even two years which allows more time for research in the last part of the university education. Also, each year the university sponsors Olympiads to select the best students.

Regarding funding, Yershov mentioned that until now funding was determined from the GKNT. Soon, however, the All-Union Fund will be operating. One-half of overall funding comes from the government and the other half from contracts. The Siberian division submits proposals to GKNT and the republic authorities in specific programs. The Siberians also obtain money from industry and from innovation funds.

Regarding technoparks, Vlaskov said that the Siberian Division does include experimental plants. SOAN will try to create specific conditions for joint ventures and provide services for profitable companies. The Soviets also explained that an entrepreneur can form a small enterprise and receive credit from an institute if he has concluded an agreement with that institute.

On determination of market need, the Soviets conceded that it is easier for joint ventures because they have introduction to western markets. It is far more difficult for internal markets.

On the consequences of individual company failures, the Soviets explained that they are just beginning in this area. They added that the institute guarantees the "risk", and are trying to establish a fund to back this.

Regarding recruitment and pre-college education, the Soviets explained their system of entrance examinations for university entry. Good grades in high school are not enough. They have 3 to 4 applicants for each vacant spot. Therefore, each high school has about 500 students, but each year 250 enter the university. Thus, the Soviets hold annual competitions -- Olympiads -- in which university academicians participate to meet with the applicants. They select about 600 students for a one-month summer camp in Akademgorodok which concludes with a test. On this basis, the university invites students to attend the university.

The Soviets also explained their correspondence school -- which has about 5000 students. Many secondary school students use the correspondence school to submit applications (approximately 1/3 students study in this way). The Siberians also offer a "Sunday school" which includes lectures and exercises. Students can receive certificates after completing this program. Also, during winter vacation, the Siberians invite students from the countryside for about 10 days to attend lectures and learn about Akademgorodok.

On the technoparks, the Soviets said that the hope to use the Russian innovation fund to provide beneficiary credits for entrepreneurs. In the RSFSR if a small business is profitable, 50% of the profit is returned to firm (some of this is used to pay back interest). In terms of money available for new entrepreneurial companies, the Soviets explained that they can obtain it from the association if it is a JV. Responding to a question regarding failure of companies because of lack of knowledge of marketing and financing, the Soviets said that the main problem now is deciding industrial production. The majority of new businesses tend to participate in the distribution rather than manufacturing of a product. The goal now is to stimulate market conditions. They expect that in the next 3-4 years the Soviets will create 2-3 million small companies.

Regarding defense conversion, the Siberians noted that they have always had close ties with defense industry. They are trying to organize new ties using small enterprises (for environment, biology). It is difficult to get financing for defense work, however (they cited the Institute of Atmospheric Optics as having problems). Yezhkov added that one month ago a special fund was created to support international research.

Institute of Atomic Physics

Academician Shrinsky informed the group of visitors that the Institute was founded in 1958. Half of its activities are in high energy physics, a quarter in fusion and plasma physics development, and the other quarter in applied activities coupled with high energy physics. 25% of the activities generate 50% of the funding. The Institute started with one small machine designed in 1957. It is now the main synchrotron site in the USSR and builds machines for Kurchatov and Zelenograd.

Two goals for high energy physics:

1. Median to long term - a 25 km linear accelerator for T-quarks at Protvino in the 150-200 GEV energy range;
2. More immediate goal is for 2 machines
 - 1 with better CEP measure for better measurements. It will be a short machine, a butterfly design with a collision on each pass through the intersection,
 - second would be a B-factory in 1996 (depending on cost) with better than 10^{-32}

He offered that electron cooling was doing better than originally envisioned through 1×10^{-2} to 1×10^{-100} of electron cooling. One dimensional quasi crystal if moving at very high speed.

Since 1973 they have been all computerized. They have had to build their own micro's and mini's. They are now trying to commercialize, but there are IPR and patent problems.

He described progress on a variety of programs as follows:

- Free electron laser program delayed due to funding, might be finished by 1993
- Compact SR sources for X-ray photography perhaps by '91/'92

They are also doing SR sources for X-ray diffraction topography, angiography, ecological measurements, and catalysis.

Also working on electron accelerators for industry for a variety of applications:
cutting metals,
killing insects in grain,
sterilizing waste, and
making heat shrinks.

They are also working on radiography - using X-rays with images on video disk on file.

Institute of Thermophysics

The Institute was founded by Kondolakasha. The Institute investigates reactions at the boundary layer between heating and boiling for gas and liquid flow. It works in a number of areas:

Internal combustion.

Hydrodynamics - work on high power flows; explosive adhering; new materials; and coatings.

Theoretical and Applied Mechanics - worked on Buran and Energia.

Mining - study plastic applications to mining problems; mechanism of mass transfer of earth, develop drill bits; computer program for modelling mining, prediction of shocks in mines, coal dust, complex coal and gas deposits, and sub-terrain coal gasification.

This year 250 million rubles have been allocated for three programs: 1) support projections with development of an infrastructure for international cooperation (for example, if a technopark is created and international participation is expected, GKNT can provide rubles for Soviet participants working in such cooperation). Last week the first meeting took place of the All-Union Fund. Laverov presided. They now are developing procedures on how to evaluate projects. The fund will begin full-scale next year.

Regarding scientists forming their own enterprise, the Siberians noted that if an enterprise goes bankrupt, the institute will pay if there is an agreement to do so (from a reserve fund).

Institute of Geology AND Geophysics

The delegation visited the Institute of Geology to tour the institute's museum. Dobretsov mentioned some of the cooperation ongoing with Stanford and South Carolina universities, adding that the institute will submit additional preliminary proposals to NSF for joint work.

Institute of Catalysis

Professor Zamarayev opened by mentioning that the cluster of institutes does both basic and applied research and remains concerned with education issues also. His institute employs 1200 people (100 in Novosibirsk and 200 in Omsk). The institute works on the study of kinetics of catalytic processes. About one-third of its efforts go towards applied research; the institute is closely tied to industry. Zamarayev also explained that his institute also heads the "Katalizator" MNTK, which consists of 25 organizations. In five years, the MNTK has developed about 190 new catalysts (about 50 were commercialized). In response to a question regarding the effect of this work on basic research, Zamarayev concurred that the more an institute gets involved in applied work, the less time it has available for basic research. On the other hand, applied work allows the institute to purchase instruments that can be used for basic research. Zamarayev went on to explain that the most successful MNTK is in microsurgery. In terms of areas of future cooperation, Zamarayev suggested treating new raw materials; chemistry of carbon dioxide; catalysis for solar energy conversion; and the role of catalysis in the "atmosphere."

The Institute of Inorganic Chemistry representative explained that his institute works on thermodynamics chemistry, extraction studies; and creating databases on such materials.

The delegate from the Institute of Organic Chemistry described work in the chemistry of natural products; environmental chemistry. At the Solid State Chemistry Institute the Soviets work on pollution prevention.

Institute of Genetics

The Soviets explained that there are 12 biological institutes in SOAN; 5 in Novosibirsk; 2 in Krasnoyarsk; 2 in Irkutsk; and 2 computer institutes in Bural and Yakutia. They are responsible for biology, soil, plants, animals and forestry.

The Institute of Cytology and Genetics, which was founded in 1957, employs about 1000 people (including 400 scientists). Its main focus of work is the structure and functions of genomes, evolution and breeding (especially plants and animals). The director listed sample work in five areas: 1) molecular genetics, including expression of genes; controlled genetic systems; recombination; 2) cytogenetics, including chromosome organization; 3) animal genetics, including the functions and structure of whole animal genomes; and genome mapping; 4) physiological genetics; including the study of disease resistance; animal adaptation; 5) plant genetics, including 8 labs working on reorganization of genome plants; disease resistance of plants; adaptation of plants to climatic conditions in Siberia (they have experimental farms throughout Siberia, particularly in the Altai region to study breeding -- Soviets offered this as a good opportunity for cooperation in genetics/breeding). (US del agreed to inform NIH and Agriculture of Soviet work in this area).

The Institute of Forestry (Krasnoyarsk) works on ecology, topology and diseases. Isayev, the former institute director, is now the Minister of Forestry. A delegation from the institute visited the US at the invitation of the Fish and Wildlife Service (probably under the Environmental Agreement), and a US delegation will visit here in August (they will probably propose some cooperation).

The Soviets described some of the ongoing genetics research, noting that "financial support is always a problem." They have 12 labs working on about 150 projects, including evolution, selection, and structuring of the genome. Examples of work include domestication of foxes; crossbreed of sheep; mapping mink and foxes, etc.

Institute of Information Systems

The complex consists of eight research institutes working on both fundamental and applied research in computer math and informatics. This area of research has always lacked financial support from the government. They've suffered from insufficient industrial support and poor management.

Its current major research guidelines include: computer mathematics; mathematical modeling of physics of the atmosphere, ocean and environmental protection; mathematic modeling in geophysics, geophysics information; theoretical grounds of dark processes, systems programming architecture of computer systems; computer aided control of enterprises; computer applications in technology of mathematical modeling and efficient use of computer facilities. The development of information infrastructure is very important in North/Northwest Siberia where concessions will be granted for the development of Siberian oil and gas. They mentioned that they would like to create an international center.

Regarding the trans-Siberian Fiber Optics cable projects, they mentioned that they have some proposals under consideration with US scientists, including tsunami prediction?. They also have a joint research project with Seattle institutes.

The Soviets referred to their "Elbrus - 2" as their best computer (with 100 million operations/second). They mentioned that the US perception that the best computers in the Soviet Union are in the military is not accurate. Those systems are very narrowly specialized.

Volkov mentioned that they are working with the University of Arizona on a paper about what we can learn from Russian computer scientists. They promoted the idea of student exchange (working with Stanford on this). (In response, Dr. Bernthal explained the process for submitting joint proposals for review).

Working Session at House of Scientists

At this working session, the US delegation heard various presentations on the following international centers the Soviets are forming:

International Altai Center of Humanitarian and Biospheric Research (Professor V. I. Molodin). This center is a non-governmental organization intended to unite international efforts to study ecology of Altai plants and animals; global change; archeology. They want to develop with foreign participation a historical record of development of peoples in this area and also work to preserve the environment. They have uncovered bodies and can extract DNA for sequencing and compare with current DNA to study human evolution.

BICER - Dr. Mikhail Grachev described the 20-30 million year-old Lake Baikal as a good area for ecological study. BICER opened in December 1990. Foreign researchers interested in working there are looking for financing within their own countries. They have to cover transatlantic flights costs and bring their own equipment. The Soviets will use rubles for internal costs. This is very costly for BICER but dollars are available from SOAN, USSR Academy of Sciences, and GKNT. The review of projects proposed is conducted using a peer review system. BICER has established an international council to review proposals. The founding members include the Association of US universities and the Royal Society of Belgium. The UK and Japan will soon join. The goal right now is to develop the necessary infrastructure at BICER.

In 1990 there were 26 international projects at BICER. Examples include 1) tagging seals to record depth of diving; 2) Baikal drilling project; and 3) diseases of Baikal seals.

International Center for Development of Northern Territories. Laverov heads the Soviet arctic program. This summer they will host a joint US-Soviet symposium.

Dr. Bromley responded that this is not quite the right group to discuss these options. We do not fund international centers, but rather joint projects.

TRIP REPORT OF VISIT TO MOSCOW, USSR

MAY 11 - 17, 1991

Dr. Philip Schambra, Director, Fogarty International Center, NIH, and Ms. Alexandra Stepanian, Program Officer for the Soviet Union and East Asia, Fogarty International Center, NIH, visited Moscow May 11-17, 1991 as part of the delegation to the second Joint Commission meeting under the US-USSR Basic Science Agreement. The 20-member delegation was headed by Dr. Allan Bromley. The Record of the Meeting, held May 13-14, and U.S. and Soviet delegation lists are attached.

Dr. Bromley raised some of the administrative problems that have plagued the cooperation in recent months. These include the difficulty in obtaining Aeroflot tickets and the resulting postponement or cancellation of Soviet visits; the demand for payment in hard currency encountered by some U.S. scientists after arrival in the Soviet Union; and problems in obtaining accommodations in the USSR. Deputy Prime Minister Laverov, head of the Soviet delegation, replied that the Soviets are discomfited by the low level of services within the country, which he ascribed in part to limited funds in scientific organizations. He noted that these problems are receiving constant attention within the Soviet Government.

MEETINGS WITH ACADEMICIAN PETROV

We met with Academician Ram V. Petrov, Vice President for Medical Research at the USSR Academy of Sciences, in the course of the Joint Commission meeting and also during a visit to the Academy on May 16. The following points were discussed:

1. NIH and the Academy will develop an MOU under the Basic Science Agreement. NIH will take the lead in drafting the document, which can be signed (after all necessary clearances are completed) at a mutually convenient time.
2. Petrov reiterated his invitation to an NIH delegation to visit the Academy and its institutes, and to meet some of the young scientists working there. If one delegation cannot be arranged, the Academy would welcome separate visits from NIH senior scientists.
3. In follow-up to discussions held last February at NIH, Petrov reiterated the Academy's desire to participate in the International Research Fellowship (IRF) Program, supported by the Fogarty International Center. The Academy is ready to establish an IRF nominating committee to select up to six candidates per year, who will compete for awards with applicants from other participating countries.

4. The Academy is also willing to participate in the Health Scientist Exchange Program, supported jointly by the Fogarty International Center and the USSR Ministry of Health. There is currently a 24 person-month quota for each side. There is an imbalance in the program, because the Soviet side uses its full quota while the U.S. side does not. One suspected reason for this is that under the program, U.S. scientists are only allowed to work with institutes under the Ministry of Health or the Academy of Medical Sciences. Dr. Schambra suggested that the existing quota be split between the Ministry and the Academy. Petrov prefers to "broaden" the program initially to include the Academy, rather than give the Academy some of the Ministry's quota. This quota can be renegotiated eventually, depending on how the exchanges progress.
5. Petrov noted that the Academy has obtained a waiver from the Aeroflot regulations requiring payment in hard currency for travel by U.S. scientists within the Soviet Union. He also said that the Academy does not have a problem with hotels, because it can put visiting scientists in its own guest houses.

ACTION: FIC will send a letter to Petrov, formally inviting the Academy to establish an IRF nominating committee and to participate in the Health Scientist Exchange Program.

FIC will explore the possibility of sending an NIH delegation to the USSR in the fall.

FIC will forward a draft MOU to the Academy, following Circular 175 clearance.

VISIT TO THE SHEMYAKIN INSTITUTE

On May 16, we visited the Shemyakin Institute of Bioorganic Chemistry. We met with its Director, Academician Vadim T. Ivanov, and his Deputy, Dr. Alexander Arseniev.

Ivanov said that the Institute is the largest within the Academy's Biological Department and also has a section in Pushchino. The Institute's mission is to study the components of living matter and the fundamental basis of molecular action. Approximately one-half of the work is pure basic research with no immediate application.

Funds for research are a problem and Ivanov enumerated several sources. The Institute is part of the National Biotechnology Administration, a branch of the Ministry of Science and Technology. The Academy's Central Fund distributes new technologies. The Academy's Central Fund

contributes some money for either salaries or buildings. The Institute also participates in the national programs of the State Committee for Science and Technology and receives some salary support from these. He noted parenthetically that researchers in commercial enterprises earn at least double the salary of government workers and that this causes jealousy and discontent among the latter. The Institute also has some direct contracts with Western firms, such as Monsanto, which also provide some research funds. The Institute has very little foreign currency at its disposal. It is engaged in negotiations with foreign law firms and chemical companies to sell know-how.

Dr. Arseniev took us on a whirlwind tour of the very impressive facilities--an enormous, modern, lavish structure, with Western equipment, rooms full of computers, shops, and a spa with an indoor swimming pool.

Dr. Arseniev has been corresponding with Richard Feldmann of the Division of Research Grants, NIH, who has begun an effort to broker contacts between Soviet scientists and American computer manufacturers with the aim of providing workstations for graphics and computation in the U.S.S.R. Dr. Arseniev is enthusiastic about the idea but noted that hard currency to purchase these is a problem.

MEETINGS WITH OTHER ACADEMICIANS

At the Academy's Presidium, Petrov arranged a brief courtesy call on Academician Marchuk, the President of the Academy. Dr. Schambra extended an invitation to him to visit NIH, which Marchuk accepted but said that his schedule during his upcoming trip to Washington was already full. He expressed his pleasure with the cooperation between NIH and the Academy.

On the first day of the Joint Commission meeting, we met with Academician Spirin, Director of the Institute of Protein Research. We discussed funding opportunities for joint research projects available through the Fogarty Center's Central and Eastern European Initiative. We gave him a copy of the application guidelines, but requested that he not distribute it widely because funds are limited.

At the U.S.-hosted reception on Monday night, we met Academician Mirzabekov, Director of the Engelhardt Institute of Molecular Biology. We expressed our regret that he was not able to join the Academy delegation on its visit to NIH last February. We extended an invitation to him to visit NIH in the near future, noting that Dr. Elke Jordan, Deputy Director of the National Center for Human Genome Research, NIH, looked forward to discussing possible cooperation with him. Mirzabekov commented that he had made an unproductive visit to NIH once before and therefore did not return in February, but hoped to do so in the near future.

4

VISIT TO MINISTRY OF HEALTH

On May 15, we met with officials of the USSR Ministry of Health to discuss issues related to the Health Scientist Exchange Program, which FIC and the Ministry jointly support and administer. The Ministry was represented by Dr. Gennadiy N. Sushkevich, Deputy Chief of the External Relations Board; Dr. Anatoliy I. Osipenko, Executive Secretary of the US-USSR Health Agreement; Mr. Andrey Petukhov, who is leaving and is being replaced by Mr. Pavel V. Konovalchuk, Protocol Department.

Dr. Sushkevich noted that the Ministry is not able to accommodate all interested scientists because of the limited quota under the exchange program. From time to time, they will send us for our consideration particularly meritorious applications even if the quota is exceeded. We noted that the program continues to suffer from an imbalance because the U.S. is never able to fill its quota, and that limited funds preclude the expansion of the quota.

We commented on some of the excellent results of Soviet visits in the past year and that many of these scientists were extended by their hosts. We also reviewed the problems we have been experiencing with last-minute postponements or cancellations of Soviet visits, short notice of arrival date, and delays in notification of acceptances of U.S. visitors. The Ministry promised to give more notice of arrivals and, in the case of postponements, to allow more time to reschedule the visit.

Sushkevich noted that the Ministry has greater difficulties in arranging visits to Moscow, because of the lack of hotels that accept rubles, than to other cities. Also, the Ministry will not be able to pay for airline tickets for Americans traveling within the Soviet Union because of Aeroflot's hard currency requirement. Train travel is not a problem, but if an American wishes to go to Siberia or other remote location, the U.S. side may have to pay for the airfare. Some ministries have requested the Cabinet of Ministers to look into the problem.

In summary, this was a useful trip, during which we further refined our plans for cooperation with the Academy, resolved some issues in our cooperation with the Ministry of Health, and observed first-hand the tumultuous changes which the Soviet Union is experiencing.

Alexandra Stepanian

Alexandra Stepanian
Program Officer for the Soviet Union
and East Asia
Fogarty International Center

Attachments

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01. Report	Soviet Military Production Conversion (6 pp.)	6/91	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: International Files - Country Files
WHORM Cat.:
File Location: Russia - Science and Technology Briefing Book [1991]

Date Closed:	5/6/2010	OA/ID Number:	62069-003
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(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

NSF

MAY 11 (SATURDAY) - MOSCOW

Arrival

Rooms at Mir Hotel are very comfortable. An ideal location - next to Embassy, conference facilities in adjacent CEMA building. Limousine caravans are oddly amusing and definitely life-threatening to anything that wanders in the way. Prices on Arbat are all of a sudden reasonable - and only in rubles - now that there is a realistic exchange rate. Management is in Council of Ministers guest house ("Osobnyak") in Lenin Hills. Nice pool table. Ivan Tabachenko of USSR State Committee for Public Education (GOSKOMOBR) gives me a draft "Protocol" for signature Tuesday; the first word we had about this was on Thursday just before I left for Moscow.¹

MAY 12 (SUNDAY) - MOSCOW

RSFSR State Committee for Science and Higher Education

Although we were received at the executive-branch State Committee, the meeting was dominated by RSFSR Supreme Soviet Science Committee Chairman Shorin. The principle of separation of powers seemed to be imperfectly understood here. Also present were RSFSR Minister of Education Dneprov and [Mikhitayev...]

Shorin asserted that Russia was establishing its own international contacts and that the jurisdiction for [science and higher education] was being transferred to the republics under a new draft law. With regard to U.S.-Soviet cooperation, he wanted to discuss (1) contacts in higher education, (2) a Russian-American university, (3) contacts between public organizations, and (4) the organization of the NSF.

¹Over the next couple of days I spent a lot of time at the very nice SLIA Compaq 286 laptop with Paul Hearn's bubble-jet printer (nice piece of work!) churning out successive drafts of the GOSKOMOBR paper, which we downgraded to a "joint statement" reconfirming the applicability of the terms of the NSF-ASUSSR MOU to projects involving Soviet universities. Naturally GOSKOMOBR also wanted free trips to and in the U.S. for their staff for "coordination." We compromised on a formulation similar to the one for JC meetings - receiving-side support in capital city only. This was actually a more favorable outcome on the issue of staff travel than in the ASUSSR MOU, which is silent on who pays. The Joint Statement was signed in the closing ceremony on Tuesday afternoon. It is already hard to remember the tribulations of the bad old days before laptops, when this sort of thing would have been totally impossible to pull off. ACTION ITEM: We must get a bubble-jet printer for INT; they cost only \$350.

Bromley responded, first, that in the U.S. education is primarily a state and local responsibility. He noted the President's recent meeting with the governors on education as well as OSTP's initiative to conduct an overview of the federal role in science education. On the organization of science in the U.S., Bromley stressed that it is proposal-driven, with a plurality of sources of support within the government and a roughly even split between overall government and private-sector funding of science. The Basic Sciences Agreement provides new opportunities for cooperation in a special way, focusing on direct contacts between individual investigators, institutes, and even states. With regard to NSF, Bernthal noted the Bush for seed funding in science/math education initiative but also the relatively small amount of funding involved as compared to total U.S. spending for education.

Malyshev said that while he was familiar with these numbers, Russia's are much lower (by a factor of ten). He wants to see more Russian students in U.S. universities. In particular, he said he is looking for direct help of U.S. government, foundations, etc. in spending on Russian students, where the Soviet spends only 7 billion rubles on 1.8 million students. Bromley cited the U.S. experience that the amount of money spent does not guarantee good education, and Ratchford noted the irony that for years Soviet science and math education had been a model for the U.S.

Malyshev, expressing a wish to speak more directly, cited two central issues for the RSFSR: (1) to obtain free entry of Russian students into U.S. universities and for them to obtain stipends; and (2) to establish links with the infrastructure of U.S. and European education - "informationization" (computer-aided education) and databanks. Bromley pointed out that the federal government has no central control over admissions and expressed skepticism about the utility of databanks in the absence of standardized protocols for them.

Bromley invited Sher to provide an update on NSF's efforts to explore cooperation in degree equivalency, as discussed in September 1990 with Ratchford. Sher described the results of the NSF/SRI background study and noted the invitation to Drs. Kinilev and Guriev to join a Ford Foundation-sponsored meeting, which Dneprov helped to arrange, in the U.S. in two weeks' time. Sher also noted that the American Society for Engineering Education, with NSF support, will sponsor a workshop on the engineering side of this issue with the Soviet Association of Engineering Societies [?] this fall in the U.S.

Dneprov stated that traditional forms of cooperation, such as exchanges, have ceased to be adequate. New forms, such as the Ford Foundation meeting, are needed. Dneprov's ministry has two proposals: for developing new educational materials (including translation of textbooks) and for joint ventures and other forms of cooperation in education-related industries (e.g., new technologies for school furniture and printing plants). He also noted that while the Bush Administration's education priority is in science/math education, theirs is in the humanities, where a total overhaul is required in many areas, such as economics and law.

Bromley indicated that while most of the activity described by Dneprov would be located in the U.S. private sector, the USG would be very interested in exploring opportunities for cooperation in curriculum development. He cautioned, however, that there may be serious IPR issues and costs in connection with utilization of existing U.S. educational materials.

Shorin expressed an interest in meeting with members of the U.S. Congress when he visits the U.S. in September to discuss educational legislation and asked if we could provide him in advance with the text of any relevant legislation. Bromley said that there is little federal legislation dealing with education but that we would be pleased to send what we can through the Embassy.

After the meeting Malyshev was overheard mumbling disappointedly to a colleague that "they gave us nothing, no stipends, nothing." There was a two-ships-passing-in-the-night quality to this discussion and it is not clear how much real intersection there is in the two sides' agendas.

MAY 13 (MONDAY) - MOSCOW

Joint Commission Meeting

Science Policy Discussion

Laverov opened by stating that in fundamental research, planning doesn't work - only scientists can do it themselves. (This statement dovetailed with Bromley's opening formulation of the JC's mission - to facilitate connections between individual scientists.)

A number of actions are being undertaken in this regard. The staff of the new All-Union Foundation for Fundamental Research is just being formed. It will be funded from the state budget for the first year at a level of 3 billion rubles, part of which will be in hard currency. Funds will be allocated on the basis of a competitive grants system. Reforms are also needed in a wide range of fields - employment and salary, new legislation for introduction of contract research, etc. IPR reform is almost in place.

The Government is focusing its priorities on fundamental research. ASUSSR funding [has been] doubled over the next five years but this is not enough. Increased attention will be paid to humanities and social sciences.

This year, the [GKNT] fund for international projects will include cooperation with the U.S. Its purpose is to attract Soviet scientists into international cooperation.

The GKNT's priorities have been expanded from 14 to 18. Six are considered to be basic research: high-energy physics, superconductivity, Mars, the human genome, plasma fusion, and global change. Last year GKNT awarded 1,300 grants out of 15,000 applications for work in this field, using a network of 4,000 reviewers.

Democratization in science is proceeding with a number of legislative reforms: the resolution [ukaz] on the status of the ASUSSR; a bill on IPR to which Laverov attaches great importance; and a new draft law on S&T policy. A law on the status of the Academy will also be adopted this year.

In science management, perestroika has resulted in a division of labor between the federation and the republics in which the latter have full responsibility for resolution of S&T problems such as education, ecology, construction, agriculture, factory siting, and innovation. There is concern about fragmentation and "localization." The organization of the most important research will take place at the federal level; Marchuk heads a council for liaison with the republics.

The "alienation of higher education and academic institutions" from research continues to be a serious problem. The Soviet Government knows that research plays an important role in education and believes that the search for linkages between the two is essential to progress.

Other innovations such as "technoparks" are also being experimented with.

Bromley described of OSTP's policy agenda, describing the FCCSET and PCAST mechanisms and providing an overview of federal S&T budget and priorities, with special emphasis on global change, high-performance computing, and science/math education. He stressed that on all policy issues federal agencies work together to make necessary adjustments to achieve these goals. In the area of "big science," the USG is interested in achieving true international cooperation in order to share costs.

Laverov responded that the USSR is not yet addressing education but spending much attention on the area of legislative reform.

Marchuk, noting the success of the NSF-ASUSSR MOU in generating investigator-based cooperative projects, made a brief statement advocating a privately funded international fund for support of cooperative projects. Bromley said that he would be happy to work with Marchuk on it, noting that it must be based on merit review.

Ocean Drilling

A joint statement placing the Ocean Drilling Program of the Basic Sciences Joint Commission was signed, with Heinrichs, Malfait, Baker, Bogdanov, and other accomplices in attendance. The ODP folks were still beaming from their success in getting the first Soviets on the Resolution a few days before. They financed a very lovely reception at Spaso House Monday evening, lavish with caviar both black and red, but claimed that they had

nothing to do with the pizza that was served later. You can't please everyone.

Meeting with Marchuk at ASUSSR

Marchuk pointed out that the new prominence of Academy members on government bodies (Laverov at GKNT, Osipyan recently renamed as Advisor to Gorbachev, AS VP for Social Science Kudryavtsev also named as a Presidential Advisor) is gratifying but also causes potential problems for the Academy, because the Academy is seen as accountable for the failures of perestroika.

With NAS, AS had decided to focus on global problems such as ecology. Marchuk felt that this was a good approach, easy to understand and appreciate for the common man [sic]. More recently he has agreed with Frank Press to create programs in technological areas.

Through the new MOU with NSF, AS is starting to participate in the process of direct personal and institutional contacts advocated by Dr. Bromley. 45 projects have been approved, of which 23 are cooperative research, which Marchuk called a totally new form of cooperation for AS. He said that the Academy would continue to go forward carefully in this direction.

Various new forms of cooperation are arising as a result of economic and political processes in the USSR. Marchuk gave the latest head-count of the ASUSSR as consisting of 300 research institutes and 200,000 staff including 65,000 researchers, with a similar number in the republican academies. In total, the Academy system accounts for some 500,000 staff including 120,000 researchers.

A major recent Academy initiative is to "decompose" large research institutes. Large research institutes have enabled the development of major scientific "schools," but they have also tended to stifle scientific creativity. ASUSSR Chief Scientific Secretary Makarov had made proposals for gradual "decomposition" of the large institutes,² but such proposals should really come from below. The process of introducing grant-based funding should help.

The Academy also wants to reverse the gap between research and education and to learn from the U.S. in this regard.

Marchuk professed strong support for perestroika and Gorbachev personally. The Academy is nearly "100%" behind Gorbachev and for stabilization. It is trying to maintain its status in a changing situation. Not everyone in the Academy agrees, of course: we have democrats, monarchists, radicals,

²During the past year ASUSSR Chief Scientific Secretary Makarov was collecting information in the U.S. about the organization and distribution of U.S. research laboratories, casting about for notions of an ideal size for institutes in connection with this initiative.

etc. The only criterion that counts in the Academy, however, is being a good scientist.

Bromley sympathized with Marchuk, noting that we also have Democrats in the U.S. He added that the federal government is also under economic pressure to reduce the size of its laboratories and is hoping that scientists from these labs can find challenging positions elsewhere. He asked whether, in the Soviet Union, part of the fall-off from the large institutes could be absorbed through the initiative to bridge the research/education gap.

Marchuk offered the Lebedev Physics Institute (FIAN) as an example of "decomposition." FIAN Director Keldysh determined that FIAN had exceeded a size at which it could be effective. It has decided to disaggregate into five institutes, each with its own elected director. The FIAN Director becomes the General Director of an Association with five legally independent "departments," each of which is headed by a "department director."³ In this way, the FIAN "school" can be preserved while allowing the younger scientists to be more independent. A similar process is taking place at the Institute for Chemical Physics, headed by Vitaliy Gol'danskiy: while the institute was at first disaggregated into two institutes (the Moscow and Chernogolovka campuses), Gol'danskiy is now thinking of breaking up the Moscow facilities into five separate institutes. The key point is that these changes were instituted "from below". There are several similar changes going on in Siberia. The ASUSSR Presidium plays no role in this process.

Marchuk does not, however, see a surplus of research personnel in the cards for at least 20 years, since a major effort must now be made to upgrade ties with industry (a new law allows the establishment of small businesses in Academy institutes) and the overall quality of engineering research. Marchuk also does not see "brain drain" as a serious concern. At the present time over 500 AS scientists are working abroad with invitations of up to 3 years. Most go for periods of 4 months. Gorbachev has given the Academy full visa rights [sic], although this has not yet been formalized into law. In the new conditions the Academy has sent people to places they have never been before, and they return because they want to stay with their scientific "school." Last year in Israel he spoke with many Soviet immigrants who wanted to know if they could return to the USSR, and he was applauded when he said "sure."

Noting that in the US small businesses tend to fail not because of technical inadequacies but because of a lack of marketing and financing expertise, Bromley asked what will be done in the USSR with people who are laid off from such enterprises. Marchuk had no answer but noted that the government has created a Stabilization Fund to support small businesses.

³Evidently the new legally independent entities described by Marchuk are called "departments" rather than "institutes."

MAY 14 (TUESDAY) - MOSCOW

Joint Commission Meeting (continued)

Reports on MOU Implementation

Krivtsov described the Ministry of Geology's pre-college geology education program co-sponsored by USGS. He also discussed the Ministry's initiative to establish an international research center at the Kola Peninsula deep-drilling site and invited all JC attendees to visit the Kola hole in September.

Osipyan welcomed the addition of experimental physics to the Agreement. He reported on his own efforts to bring Soviet experimentalists in high-temperature physics together with U.S. theorists from Urbana (John Bardeen) for work in high-temperature superconductivity, as well as a separate project with LASL. In chemistry, he noted that Platch had just left for meetings in Washington with Ken Hancock of NSF [sic]. On the issue of cost-sharing raised yesterday by Bromley, Osipyan noted the ASUSSR's heavy involvement in negotiations with DOE on Soviet participation in the SSC. In science/math education, he acknowledged NSF's seed support for Quantum magazine but lamented that it's been very hard to help American teachers who need help with the answers. With regard to brain-drain, Osipyan cautioned that while a few outstanding Soviet emigrants have received "special treatment," many others are having problems in the U.S. and Americans should be careful that job applicants are "honest." He suggested that the ASUSSR could help by serving as an interface. He indicated that the NSF plays a very important role in funding invitational Soviet post-docs through research grants to US investigators.

Bernthal's report on NSF-ASUSSR implementation was well received.

Amendments

Amendments to broaden the Agreement and MOU were agreed to.

Other Issues

Looking toward the future, Bromley asked the JC to consider where we want to be in the long term (five years) and medium term (two-three years). In the long term, the JC should be able to play a major role in planning large projects such as SSC and Kola; but it should be able to plan them from the beginning, rather than picking them up in the middle: this would break new ground. In the medium term, the JC should focus on (1) developing a broader framework, allowing us to take into account new areas of science

that may not have been anticipated in the Basic Science Agreement, and (2) removing impediments to cooperation, such as IPR, visa and travel problems, etc. In 18 months we will be negotiating a new agreement and we should start thinking now about whether we need a broader umbrella under which we might bring many existing bilaterals. Our main objective should be to develop mechanisms that strengthen and facilitate scientific cooperation at the individual level.

Laverov agreed on the importance of individual contacts and was especially pleased with Bromley's proposal on large projects. But in this regard he felt that the JC could play only an advisory role [?? - this does not mesh with what follows]. In the new Union, the center will still play an important role in the funding and coordinating of science; the science function will be on the same level as defense and international affairs. The Supreme Soviet will soon adopt IPR legislation similar to that in the US. Travel and financial support are such low-level issues that action can be taken without the need to adopt new rules. In summary, Laverov expressed support for all Bromley's proposals.⁴

Bromley agreed to work on these issues with Laverov at the next JCM. He expressed reservations, however, about financial constraints in light of USG budget problems.

Ocean Drilling

A brief but substantive presentation was made by Jim Baker, President of JOI.

Education

Shukshunov suggested the addition of "Education" as a new area in the Agreement after "Social Sciences," with special reference to research on education. Bernthal agreed with Shukshunov as to the unity of research and education but said that he wanted to take the proposal back to the US and consult with his colleagues. Laverov said he was very pleased with Shukshunov's proposal and that he believes that more attention should be given to the science of education.

Other Presentations

⁴Yezhkov privately asked me later in Novosibirsk, whether discussion of broadening of the JC's role is something that could be pursued through the Science Policy rubric of the intergovernmental Agreement. I said I thought this might be possible but that the range of issues envisioned by Bromley might go beyond basic research. Yezhkov may follow up with a letter to Ratchford.

Consistent support for the principle of cooperation based on investigator-initiated, direct contacts.

Organizational and Policy Issues

Bromley expressed USG concern about problems experienced by US scientists in the USSR who are required to pay in hard currency for hotels or internal transportation, and by Soviet scientists in obtaining seats on Aeroflot. Laverov said the Soviet side was aware of the problems, they are uncomfortable about them, they will try to find solutions, the problems are beyond the control of the JC, that these are temporary difficulties but he can't promise immediate relief.

Concluding Remarks/Press Conference

Bromley, returning to the education theme, highlighted US interest in learning how the Soviets achieve excellence in pre-college science and math. Laverov also noted that Soviet and American scientists will collaborate in the social sciences, "including" education.

Evening Activities

Tuesday evening we had dinner in the Kremlin! We were all undoubtedly very impressed with ourselves as we passed through the Kremlin gates in a fleet of black limousines with American flags taped on the windows. The dinner itself was in a room on the second floor rear of the Palace of Congresses building. Even though it was not in the St. George's Hall (which I'm saving for next time) it was quite elegant, with five crystal glasses at each setting, lots of silver and other paraphernalia, formal toasts, an army of waiters, and pretty good (but not overabundant) food.

Our flight for Novosibirsk left at about midnight, only an hour late. We arrived at about 8 AM, having passed through 4 time zones. I spoke for about 1,500 miles with a young chap about my age named Sergey, a native Siberian who is a retired army officer who lives in Vilnius. He did not seem to be the hard-liner one might expect; he thought that the only hope for Russia was to send in lots of Western expertise. In fact he got into quite a lively argument with the middle-aged woman sitting next to him when he said that the current leadership ought to go; she took this as a personal affront and, as much as I could make out, began praising every Soviet leader from Gorbachev to Stalin in what was apparently an affirmation of patriotism.

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

April 8, 1991

MEMORANDUM FOR D. ALLAN BROMLEY

THROUGH: J. THOMAS RATCHFORD

FROM: JOHN F. O'NEIL JFO

SUBJECT: BASIC SCIENCES JOINT COMMISSION MEETING
MAY 13-18, 1991

PURPOSE. To inform you of planning for the Basic Sciences JCM and solicit your decision on four issues.

NSC CONCURRENCE. Bob Gates provided NSC concurrence in Tab A.

US DELEGATION. Tab B is current "tentative" delegation list. Charlie Herzfeld is considering attending. A phone call, should you desire his participation, would be in order.

AGENDA. The agenda (Tab C) has been reworked per Dr. Ratchford's guidance. State has sent it to GKNT and we await their response. Our proposal provides for all sessions on Monday and Tuesday - 13 and 14 May, with Monday afternoon free for parallel discussions at the working level and other appointments for you and other senior delegation members.

We also propose a reception on Tuesday evening at the Ambassador's residence. I expect the Soviets will host a reception on Monday evening or a luncheon. Our proposal also provides for site visits Wednesday through Friday. We have requested Novosibirsk and Baikonaur. Other members of the delegation from NSF, State, and NIST would like to accompany you on this trip.

LOGISTICS. Most delegation members are planning to travel on Pan Am non-stop from JFK, departing Friday 10 May and arriving Saturday. I will arrive early with the Executive Secretary, Cathy Campbell. You are scheduled to depart the following Saturday, 18 May, non-stop Moscow to JFK. Other departures vary depending on site visits.

The Soviets will provide our Moscow accommodations and we have not heard from them yet. The new Science Counsellor to Moscow, Bob Clarke, understands that we expect him to protect our interests on this issue and will work on it when he arrives.

DELEGATION MEETING. Planning is under way for a delegation meeting. I propose an agenda (Tab D) which: updates delegation members on developments in the USSR and Soviet science since our last meeting, updates them on the agreement itself, and provides time for you to discuss other aspects of the meeting and issue overall guidance. This agenda will take approximately 2 hours.

I believe the meeting should be held about one week before departure to allow additional staff work if required and to avoid crowding calendars before departure. The following possibilities appear reasonable:

Wednesday	May 1 afternoon
Friday	May 3 after PCAST
Monday	May 6 afternoon

I recommend May 1 or 3. Please indicate your preference.

Please also indicate your concurrence or changes to the proposed agenda.

MEETING BOOK. Tab E is a draft table of contents for the meeting book. I have tried to be all inclusive, allowing members to discard what they do not need to carry to Moscow. The book will be unclassified. Please indicate adjustments you would like to make.

APPOINTMENTS FOR YOU IN MOSCOW. We should plan now for your appointments in Moscow. For your consideration, I propose meetings with the following individuals:

Academician RYZHOV - Chairman of USSR Supreme Soviet Committee on Science, Rector of Moscow Aviation Institute, and Yeltsin's Science Adviser. He met with Dr. Ratchford in Washington on March 21, 1991.

Academician MARCHUK - President of Soviet Academy of Sciences.

Russian Prime Minister SILAYEV and his deputy Dr. MALESHEV who is also Chairman of the Russian State Committee on Science and Education. Dr. Ratchford met with Maleshev in Moscow on September 25, 1990. This might also be an opportunity to meet with BORIS YELTSIN.

Academician Alexander PROKOROV - President of the Russian Academy and Director of the General Physics Institute in Moscow.

Vadim SHORIN - Chairman of the Russian Supreme Soviet Committee on Science.

We expect Academician Laverov will arrange a call for you with the Soviet Prime Minister PAVLOV.

This is a very ambitious schedule. I believe you will not be able to see all these people on Monday afternoon. You may want to consider seeing Academician Marchuk at dinner on Saturday or Sunday. I expect Academician Ossipyan will be a member of the Soviet delegation, if his health permits.

Please indicate additions and/or deletions to the proposed visits. Please advise if I should protect some other time for you to meet with Academician Ossipyan.

John C. Neill

2123

THE WHITE HOUSE
WASHINGTON

March 29, 1991

MEMORANDUM FOR J. THOMAS RATCHFORD

FROM: ROBERT M. GATES *Rg*
SUBJECT: OSTP Notice of Meeting with Soviets

Thank you for your advance notice of the Moscow meeting of the Basic Sciences Joint Commission during the week of May 12, 1991. Assuming completion of the Circular 175 and "Procedures to Govern US Participation in Science-related Activities with Warsaw Pact Countries," we concur in the proposed meeting.

SECOND U.S.-U.S.S.R. JOINT COMMISSION MEETING

U.S. DELEGATION (TENTATIVE)

Chairman

Dr. D. Allan Bromley
Assistant to the President for
Science and Technology, and
Director, Office of Science
and Technology Policy

Commissioners

Dr. Frederick Bernthal
Deputy Director
National Science Foundation

Dr. John P. Boright
Deputy Assistant Secretary for
Science and Technology Affairs
Department of State

Mr. Doyle Frederick
Associate Director
United States Geological Survey

Dr. J. Thomas Ratchford
Associate Director for
Policy and International Affairs
Office of Science and Technology Policy

Mr. John Sayre
Assistant Secretary for Water
and Science
Department of Interior

Dr. Philip Schambra
Director
Fogarty International Center
National Institutes of Health
Department of Health and Human Services

Dr. Alan Schriesheim
Director
Argonne National Laboratory

Dr. George A. Sinnott
Director for International
and Academic Affairs
National Institute of Standards
and Technology

?
will be
adviser

?
will be
adviser

B

Dr. Robert White
President
National Academy of Engineering

Ms. Deborah Wince-Smith
Assistant Secretary for International
Trade Administration
Department of Commerce

Executive Secretary

Ms. Cathleen Campbell
Program Officer
Bureau of Oceans and International
Environmental and Scientific Affairs
Department of State

Advisors

Dr. Paul Hearn
Chief for Soviet Programs
Office of International Geology
United States Geological Survey

Col. John O'Neil
Senior Policy Analyst
Office of Science and Technology Policy

Dr. Gerson Sher
Program Manager, US-USSR
Cooperative Science Programs
Division of International Programs
National Science Foundation

Mr. Sidney Smith
Office of Soviet Union Affairs
Department of State

Ms. Alexandra Stepanian
Program Officer for the USSR
Fogarty International Center
National Institutes of Health
Department of Health and Human Services

Dr. John Thomas
Special Assistant for Science and Technology
Office of the Secretary of Defense
Department of Defense

**US Proposals for the Agenda
of the Second Session of the Joint US-USSR Commission
on Cooperation in the Field of Basic Scientific Research**

**Moscow, USSR
May 13-14, 1991**

- I. Introduction**
- II. Reports of the Heads of Delegation on Basic Directions of Scientific-Technical Policy in Both Countries**
 - Signature of Joint Statement of ODP**
- III. Reports on Ongoing Cooperation; Status of Development of New MOUs**
 - MOU in Basic Scientific Research**
 - MOU in Geoscience**
 - Other reports**
- IV. Discussion of Organizational and Policy Issues**
 - Administration and Logistics**
 - Review of Procedures for Joint Commission**
 - Other Policy Issues**
- V. Time and Place for the Third Session of the Commission**
- VI. Summary of Results and Concluding Remarks**
 - Signature of Documents**

JCM DELEGATION MEETING AGENDA

DEVELOPMENTS IN THE USSR DURING THE PAST YEAR

ROBERT BLACKWELL 20 MINUTES

DEVELOPMENTS IN SOVIET SCIENCE SINCE LAST JCM

PAUL COCKS 20 MIN

US POLICY TOWARDS THE SOVIET UNION

CURT KAMMAN 20 MIN

USE OF SOVIET SCIENCE FOR INTELLIGENCE PURPOSES

JIM DEARLOVE 10 MIN

US EMBASSY SUPPORT TO JCM/DELEGATION

SID SMITH 10 MINUTES

BASIC SCIENCES AGREEMENT - HISTORY/PROVISIONS

JOHN BORIGHT 10 MIN

JCM AGENDA

DR. BROMLEY 30 MIN

2 HOURS

DRAFT

US-USSR Basic Sciences Agreement
Joint Commission Meeting
May 13-14, 1991

BRIEFING BOOK
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DRAFT

-2-

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SESCTA 5215
4/2/91, revised 4/4/91

NOTES FROM MAY 1, 1991 DELEGATION MEETING ON BASIC SCIENCES

SUBJECT: DELEGATION OBJECTIVES

DR. HERZFELD	SOME BASIC SCIENCE IN THE USSR THAT WOULD BE BENEFICIAL TO US DEFENSE
DEBORAH	HOW TO DE-COUPLE MILITARY AND CIVIL SCIENCE
PAUL COCKS CIA BRIEFER	WHO IS IN CHARGE HOW DOES IT WORK HOW TO DECLASSIFY RESEARCH
JOHN O'NEIL	HAVE LAVEROV EXPLAIN SOVIET SCIENCE POLICY
JOHN THOMAS	UNDERSTANDING OF THE RELATIONSHIP BETWEEN DOD USSR ACADEMY AND REPUBLIC ACADEMIES
GERSON SHER NSF	CONNECTION BETWEEN RESEARCH AND UNIVERSITIES
DR RATCHFORD	90/10 SPLIT SWITCH IN GOV/PRIVATE SCIENCE COOPERATION WHERE DO WE WANT TO GO W/ SUCCESSOR AGREEMENT
SID SMITH SOVIET DESK	MEANING FOR GKNT TO CONTINUING THIS TYPE AGREEMENT
GERSON	MORE IMPORTANT TO CONTINUE W/ RSFSR STATE COMMITTEE GKNT LESS IMPORTANT
PAUL HEARN USGS	PREVENT SOVIET ATTEMPTS TO PROLIFERATE MOU'S AMONG EXISTING PARTNERS MAKE EXISTING MOU'S WORK FOR CROSS COOPERATION PROBLEMS WITH FINANCING AND THEIR HOLDING OUR RESEARCH HOSTAGE TO OUR INCREASED FUNDING
JENNY BOND	ROLE OF COOPERATIVES IN THIS SORT OF COOPERATION
DR. BROMLEY	SOVIET REQUEST TO BROADEN OVERALL COOPERATION INTO APPLIED WHAT ABOUT AN UMBRELLA AGREEMENT
DR. WHITE	THEY MAY PUSH FOR MORE COMMERCIALIZATION AND APPLIED WORK
JENNY	BROADEN TO INCLUDE SCIENCE EDUCATION

UNCLASSIFIED

INCOMING
TELEGRAM

ACTION

Department of State

PAGE 01 MOSCOW 12212 00 OF 02 011428Z
ACTION OES-09

SHB3939

INFO	LOG-00	ACDA-13	ADS-00	AMAD-01	CIAE-00	DOEE-00	EUR-00
	INRE-00	INR-01	L-03	MCO-00	NSAE-00	PA-02	PM-00
	PRS-01	SP-00	SS-00	T-01	USIE-00	/036W	

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P 011425Z MAY 91
FM AMEMBASSY MOSCOW
TO SECSTATE WASHDC PRIORITY 2333
INFO WHITEHOUSE WASHDC PRIORITY
NASA WASHDC
SECDEF WASHDC
MOSCOW POLITICAL COLLECTIVE

UNCLAS MOSCOW 12212

DEPT/ FOR OES/ SGT (CAMPBELL), OES/ SAT, AND EUR/ SOV

WHITE HOUSE FOR OSTP (O'NEILL)

DOD FOR OSD/ DISA (THOMAS)

E.O. 12356: N/A
TAGS: TSPA, TSPL, ECON, KSCA, UR
SUBJECT: PRESS REPORT ON THE "CONVERSION" OF
BAIKONUR COSMODROME

1. SUMMARY: A RECENT ARTICLE IN IZVESTIYA DISCUSSES
POSSIBLE FUTURE USES OF THE BAIKONUR COSMODROME --

CHANGES WHICH WOULD PROVIDE GREATER ECONOMIC BENEFIT
TO KAZAKHSTAN THAN THE BAIKONUR SPACE CENTER HAS IN
THE PAST. A BRIEF EMBASSY CHECK WITH GLAVKOSMOS
YIELDED ONLY THE COMMENT THAT FUTURE USES DEPEND ON
THE CENTER-REPUBLIC RELATIONSHIPS. END SUMMARY.

2. EMBASSY WISHES TO CALL TO DEPARTMENT'S ATTENTION
A RECENT ARTICLE IN IZVESTIYA (APRIL 13), WHICH
DISCUSSED THE FUTURE STATUS OF THE BAIKONUR
COSMODROME. THE SUBJECT IS OF GENERAL INTEREST, BUT
IS ESPECIALLY TIMELY IN LIGHT OF FORTHCOMING BASIC
SCIENCES JCM TO BE HELD IN MOSCOW, WHICH INCLUDES A
TRIP TO BAIKONUR.

LOCAL-COSMODROME RELATIONS NOT THE BEST?
/-----/

3. THE ARTICLE STATES THAT SENTIMENT IN KAZAKHSTAN
IS FAIRLY NEGATIVE ON BAIKONUR, NOTING THE RECENT
COMMENTS BY KAZAKH PRESIDENT NAZARBAYEV TO THE EFFECT
THAT THE COSMODROME'S POWERFUL SCIENTIFIC AND
TECHNICAL BASIS HAS BEEN OF NO USE TO THE REPUBLIC.
THE ARTICLE CITES LOCAL FEELING THAT THE CITY OF
BAIKONUR HAS, FOR FORTY YEARS, PROVIDED EVERYTHING
NECESSARY TO THE COSMODROME, WITH LITTLE TO SHOW IN
RETURN. WITH THE DECLINE OF MILITARY USE AND
CONSTRUCTION AT BAIKONUR, REPUBLIC AUTHORITIES ARE
BEGINNING TO SPECULATE ABOUT ITS FUTURE ROLE. THIS
ROLE WOULD MOST LIKELY BE HEAVILY "CIVILIAN." AT
LEAST, THERE IS A POSSIBILITY OF SUCH CONVERSION,
UNLIKE THE CASE WITH THE OTHER MAJOR

CENTER-ESTABLISHED PROJECT IN KAZAKHSTAN -- THE
NUCLEAR TEST GROUNDS AT SEMIPALATINSK.

KAZAKH PLANS FOR BAIKONUR'S FUTURE--MORE EARTH-BOUND?
/-----/

4. ACCORDING TO THE ARTICLE, KAZAKHSTAN REPUBLIC
OFFICIALS, NOTABLY PRESIDENT NAZARBAYEV, HAVE

MOSCOW 12212 00 OF 02 011428Z
MENTIONED PLANS TO USE BAIKONUR SPACE CENTER TO
DEVELOP HIGH TECH INDUSTRIES, SPECIFICALLY MATERIALS
SCIENCES, COMPUTERS, AND OTHER SPACE-RELATED AREAS.
SEVERAL HIGH-LEVEL SPACE INDUSTRY FIGURES (YURIY
SEMENOV OF NPD "ENERGIYA," IKI DIRECTOR GALEYEV,
MINISTER OF GENERAL MACHINE-BUILDING SHISHKIN, AMONG
OTHERS) RECENTLY TRAVELED TO ALMA-ATA TO WORK OUT AN
AGREEMENT WITH REPUBLIC AUTHORITIES WHICH ENVISAGES
PROJECTS WORTH HUNDREDS OF MILLIONS OF RUBLES.
SPECIAL ATTENTION WILL BE DEVOTED TO THE DEVELOPMENT
OF COMMUNICATIONS AND SATELLITE TV FOR THE REPUBLIC.
OTHER PROJECTS AGREED ON WERE PROSPECTING FOR OIL IN
THE MANGYSHLAK REGION AND "INVENTORING" OF THE
REPUBLIC'S SOIL AND LAND RESOURCES THROUGH REMOTE
SENSING, AS WELL AS THE PRODUCTION OF SOME NEEDED
PROCESSING EQUIPMENT FOR AGRICULTURE.

5. THE REPUBLIC PLANS ALSO CALL FOR THE
ESTABLISHMENT OF FUNDAMENTAL RESEARCH AND EDUCATIONAL
PROGRAMS BASED OUT OF BAIKONUR. AN INSTITUTE ON
SPACE RESEARCH IS PLANNED, TO BE ESTABLISHED UNDER
THE AUTHORITY OF THE REPUBLIC'S ACADEMY OF SCIENCES.
THIS INSTITUTE WILL FOCUS ON THE FIELD OF REMOTE

SENSING AND THE RATIONAL USE OF NATURAL RESOURCES
(CATALOGUED AND MONITORED BY SATELLITE).

TURNING SPACESHIPS TO PLOUGHSHARES?
/-----/

6. THE ARTICLE NOTED THAT THE AMOUNT OF
MILITARY/SPACE CONSTRUCTION IS DIMINISHING, AND THE
LOCAL INHABITANTS APPARENTLY HAVE GREAT HOPES THAT
THIS WORK FORCE AND ITS EXPERTISE MAY BE ABLE TO HELP
THE AREA AROUND THE COSMODROME CONSTRUCT SCHOOLS,
HOSPITALS, SHOPS, AND APARTMENTS. (COMMENT: IT DOES
NOT STATE WHO WILL FOOT THE BILL FOR THIS
ASSISTANCE. ADDITIONALLY, IN OTHER AREAS OF THE
SOVIET UNION, IT HAS BEEN FOUND THAT WORKERS IN THE
FORMERLY HIGH-PAY, HIGH-STATUS DEFENSE JOBS OFTEN
HAVE NOT MADE THE TRANSITION TO USING THEIR SKILLS IN
GRUBBIER, MORE DOWN-TO-EARTH AREAS. END COMMENT.)

GLAVKOSMOS: NO COMMENT
/-----/

7. DURING THE COURSE OF OTHER BUSINESS, S&TOFF
DISCUSSED THE QUESTION OF THE CONVERSION OF BAIKONUR
WITH GLAVKOSMOS INTERNATIONAL AFFAIRS OFFICIALS.
THEY NOTED BRIEFLY THAT THE ULTIMATE FATE OF BAIKONUR
WAS TIED TO THE CENTER-REPUBLIC RELATIONS, BUT IT
WOULD UNDOUBTEDLY CONTINUE ITS LAUNCH FUNCTIONS.
THEY CLAIMED UNFAMILIARITY WITH THE KAZAKH REPUBLIC'S
PLANS FOR THE SPACE CENTER.

MATLOCK

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20508

April 23, 1991

MEMORANDUM FOR DISTRIBUTION LIST

FROM: J. THOMAS RATCHFORD 
SUBJECT: DELEGATION MEETING FOR BASIC SCIENCES

Dr. Bromley has called a meeting of the US Delegation to the Basic Sciences Joint Commission Meeting for 2:00 PM, May 1, 1991. The meeting will last for two hours and will be held in Room 476 of the Old Executive Office Building. All members of the delegation are requested to attend.

The agenda is attached.

Please call Ginny Rosell at 202-395-7396 to provide the required information for clearance into the building.

ADDRESSEES

Frederick Bernthal	NSF
John Boright	State
Cathleen Campbell	State ✓
Doyle Frederick	USGS
Paul Hearn	USGS
Charles Herzfeld	DOD
John O'Neil	OSTP
John Sayre	Interior
Phillip Schambra	NIH
Gerson Sher	NSF
George Sinnott	NIST
Sidney Smith	State
Alexandra Stepanian	NIH
John Thomas	DOD
Deborah Wince-Smith	Commerce (Principal)
Sheri Fox	Commerce (+1)
Robert White	NAE
Allan Schriesheim	Argonne

JCM DELEGATION MEETING AGENDA

DEVELOPMENTS IN THE USSR DURING THE PAST YEAR

~~ROBERT BLACKWELL~~
BRIAN MCCANLEY

20 MINUTES

DEVELOPMENTS IN SOVIET SCIENCE SINCE LAST JCM

PAUL COCKS

20 MIN

US POLICY TOWARDS THE SOVIET UNION

CURT KAMMAN

20 MIN

USE OF SOVIET SCIENCE FOR INTELLIGENCE PURPOSES

JIM DEARLOVE

10 MIN

US EMBASSY SUPPORT TO JCM/DELEGATION

SID SMITH

10 MINUTES

BASIC SCIENCES AGREEMENT - HISTORY/PROVISIONS

GERSON SHER / CATHY CAMPBELL
~~JOHN BORIGHT~~

10 MIN

JCM AGENDA

DR. BROMLEY

30 MIN

2 HOURS

US-USSR Basic Sciences Agreement
Joint Commission Meeting
May 13-14, 1991
Moscow, USSR

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SESCTA 5215
4/29/91

US-USSR Basic Sciences Agreement
Joint Commission Meeting
May 13-14, 1991
Moscow, USSR

AGENDA (TENTATIVE)

- I. Introduction (Co-Chairmen)
- II. Reports of the Heads of Delegation on Basic Directions of Scientific-Technical Policy in Both Countries
 - Discussion of Conversion
 - Signature of Joint Statement on ODP
- III. Reports on Ongoing Cooperation; Status of Development of New Memoranda of Understanding
 - MOU in Basic Scientific Research (NSF and USSR Academy of Sciences)
 - MOU in Geosciences (USSR Ministry of Geology and DOI/USGS)
 - Status of New Initiatives
 - Proposal to Amend Basic Sciences Agreement (OSTP)
 - Proposal to Amend NSF-Academy MOU (NSF)
 - NIST-Academy of Sciences MOU (Academy of Sciences)
 - USGS-CGK (formerly GUGK) MOU (USGS)
 - Discussions between NIH and Academy of Sciences (Academy of Sciences)
 - Cooperation in the Ocean Drilling Program
- IV. Discussion of Organization and Policy Issues (Co-Chairmen)
 - Administration and Logistics
 - Review of Joint Commission Procedures
 - Other Policy Issues
- V. Time and Place for the Third Session of the Joint Commission (Co-Chairmen)
- VI. Summary of Results and Concluding Remarks (Co-Chairmen)
 - Signature of Documents

US-USSR Basic Sciences Agreement
Joint Commission Meeting
May 13-14, 1991
Moscow, USSR

Schedule of Meetings (Tentative)

Sunday, May 12

P.M. Appointments requested for Dr. Bromley with Academician Yuriy Ryzhov, or RSFSR Prime Minister Silayev; Dr. Nikolay Malyshev; Academician Yuriy S. Osipov; or Dr. Vladimir Shorin

P.M. Dinner meeting: Dr. Bromley and Academy of Sciences President Marchuk

Monday, May 13 -- Joint Commission Meeting

A.M. I. Introduction (Co-Chairmen) -- 20 minutes

A.M. II. Reports of the Heads of Delegation on Basic Directions of Scientific-Technical Policy in Both Countries (Co-Chairmen) -- 1 hour

-- Discussion of Conversion
-- Signature of Joint Statement on ODP

P.M. No Formal Session

-- Working Level Meetings to Prepare Joint Reports
-- Meetings for Dr. Bromley and Other Commission Members to be Arranged

P.M. US-Hosted Reception at Spaso House

Tuesday, May 14

- A.M. III. Reports on Ongoing Cooperation; Status of Development of New MOUs
- MOU in Basic Scientific Research (NSF and USSR Academy of Sciences) -- 30 minutes
 - MOU in Geoscience (Ministry of Geology and Department of Interior) -- 30 minutes
 - Status of New Initiatives:
 - Proposal to Amend the Basic Sciences Agreement (Dr. Bromley) - 15 minutes
 - Proposal to Amend the NSF-Academy of Sciences MOU (Dr. Bernthal) - 15 minutes
 - NIST-Academy of Sciences MOU (Academy of Sciences) - 15 minutes
 - USGS-GUGK MOU (USGS) - 15 minutes
 - Report on Discussions Between NIH and Academy of Sciences (Academy of Sciences) - 15 minutes
 - Report on Cooperation in the Ocean Drilling Program (NSF) - 15 minutes
- P.M. IV. Discussion of Organizational and Policy Issues (Co-Chairmen)
- Administration and Logistics - 15 minutes
 - Review of Procedures for Joint Commission - 15 minutes
 - Other Policy Issues - 30 minutes
- P.M. V. Time and Place for the Third Session of the Commission (Co-Chairmen) - 5 minutes
- P.M. VI. Summary of Results and Concluding Remarks (Co-Chairmen) - 20-40 minutes
- Signature of Documents - 10-15 minutes
- P.M. GKNT-Hosted Reception
- SESCTA 5330, 4/19/91

US-USSR Basic Sciences Agreement
Joint Commission Meeting
May 13-14, 1991
Moscow, USSR

Schedule of Meetings (Tentative)

Sunday, May 12

P.M. Appointments requested for Dr. Bromley with
Academician Yuriy Ryzhov, or RSFSR Prime Minister
Silayev; Dr. Nikolay Malyshev; Academician Yuriy S.
Osipov; or Dr. Vladimir Shorin

P.M. Dinner meeting: Dr. Bromley and Academy of Sciences
President Marchuk

Monday, May 13 -- Joint Commission Meeting

A.M. I. Introduction (Co-Chairmen) -- 20 minutes

A.M. II. Reports of the Heads of Delegation on Basic
Directions of Scientific-Technical Policy in Both
Countries (Co-Chairmen) -- 1 hour

-- Discussion of Conversion
-- Signature of Joint Statement on ODP

P.M. No Formal Session

-- Working Level Meetings to Prepare Joint Reports
-- Meetings for Dr. Bromley and Other Commission
Members to be Arranged

P.M. US-Hosted Reception at Spaso House

Tuesday, May 14

- A.M. III. Reports on Ongoing Cooperation; Status of Development of New MOUs
- MOU in Basic Scientific Research (NSF and USSR Academy of Sciences) -- 30 minutes
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 - USGS-GUGK MOU (USGS) - 15 minutes
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 - Report on Cooperation in the Ocean Drilling Program (NSF) - 15 minutes
- P.M. IV. Discussion of Organizational and Policy Issues (Co-Chairmen)
- Administration and Logistics - 15 minutes
 - Review of Procedures for Joint Commission - 15 minutes
 - Other Policy Issues - 30 minutes
- P.M. V. Time and Place for the Third Session of the Commission (Co-Chairmen) - 5 minutes
- P.M. VI. Summary of Results and Concluding Remarks (Co-Chairmen) - 20-40 minutes
- Signature of Documents - 10-15 minutes
- P.M. GKNT-Hosted Reception

SESCTA 5330, 4/19/91

US-USSR Basic Sciences Agreement
Joint Commission Meeting
May 13-14, 1991
Moscow, USSR

U.S. DELEGATION

Chairman

Dr. D. Allan Bromley
Assistant to the President for
Science and Technology, and
Director, Office of Science
and Technology Policy

Commissioners

Dr. Frederick Bernthal
Deputy Director
National Science Foundation

Dr. John P. Boright
Deputy Assistant Secretary for
Science and Technology Affairs
Department of State

Dr. Charles M. Herzfeld
Director of Defense Research
and Engineering
Department of Defense

Dr. J. Thomas Ratchford
Associate Director for
Policy and International Affairs
Office of Science and Technology Policy

Mr. John Sayre
Assistant Secretary for Water
and Science
Department of Interior

Dr. Philip Schambra
Director
Fogarty International Center
National Institutes of Health
Department of Health and Human Services

Dr. Alan Schriesheim
Director
Argonne National Laboratory

Dr. Robert White
President
National Academy of Engineering

Ms. Deborah Wince-Smith
Assistant Secretary for Technology Policy
Technology Administration
Department of Commerce

Executive Secretary

Ms. Cathleen Campbell
Program Officer
Bureau of Oceans and International
Environmental and Scientific Affairs
Department of State

Advisors

Mr. Doyle Frederick
Associate Director
United States Geological Survey

Dr. Paul Hearn
Chief for Soviet Programs
Office of International Geology
United States Geological Survey

Col. John O'Neil
Senior Policy Analyst
Office of Science and Technology Policy

Dr. Gerson Sher
Program Manager, US-USSR
Cooperative Science Programs
Division of International Programs
National Science Foundation

Dr. George A. Sinnott
Director for International
and Academic Affairs
National Institute of Standards
and Technology

Mr. Sidney Smith
Office of Soviet Union Affairs
Department of State

Ms. Alexandra Stepanian
Program Officer for the USSR
Fogarty International Center
National Institutes of Health
Department of Health and Human Services

Dr. John Thomas
Special Assistant for Science and Technology
Office of the Secretary of Defense
Department of Defense

Mr. Robert Clarke
S&T Counselor
U.S. Embassy Moscow

SESCTA 5268

US-USSR BASIC SCIENCES AGREEMENT
SECOND JOINT COMMISSION MEETING

U.S.S.R. DELEGATION (TENTATIVE)

Chairman

Academician Nikolay P. Laverov
Deputy Prime Minister, and Chairman,
USSR State Committee for Science
Technology

Vice Chairmen:

Academician Yuriy A. Osipyan
Vice President of the USSR
Academy of Sciences

Vladimir V. Yezhkov
Deputy Chairman of the State
Committee for Science and Technology

Grigoriy A. Gabrielyants
Minister of Geology

Scientific Secretary:

Valeriy Ye. Anoshin
Department of Scientific and Technical
Cooperation with Foreign Countries
State Committee for Science and Technology

Members

Academician Andrey A. Gonchar
Academician-Secretary
Mathematics Department
USSR Academy of Sciences

Academician Igor S. Gramberg
Director, Institute of Geology
and Mineral Resources of
the World Oceans (VNII Okeangeo)

Academician Nikolay A. Plate
Director, Institute of Petrochemical
Synthesis
USSR Academy of Sciences

Academician Aleksandr S. Spirin
Director, Institute of Protein
USSR Academy of Sciences

Valentin Ye. Shukshunov
Deputy Chairman of the USSR State
Committee for Public Education

Eduard Malayan
Head of Office
USA and Canada Department
USSR Ministry of Foreign Affairs

Yevgeniy B. Smirnov
Chief, Scientific-Technical Progress
Department
USSR Cabinet of Ministers

Experts

Pyotr Ye. Obolentsev
Chief, Administrative Department
State Committee for Science and Technology

Mikhail V. Barbarich
Deputy Director, Office of Social and
Economic Affairs
Executive Department of the Communist
Party Central Committee

Eduard A. Gryaznov
Assistant to the Minister of Geology

Nikolay N. Buzayev
Deputy Chief of Department
State Committee for Science and Technology

Vladimir A. Stepanov
Senior Inspector, Office of Foreign
Relations
USSR Academy of Sciences

#3BR

COMMENTS ON SCIENCE POLICY

THEME: A FLOW FROM WHITE HOUSE THROUGH ALL LEVELS TO THIS AGENDA

STRATEGY OF SCIENCE IN THE WHITE HOUSE

ASSISTANT TO THE PRESIDENT

PCAST

FCCSET REVITALIZED

Technology
— Social Sciences —

Equal division
federal/industry.
\$75 B

50% of basic in universities
(NSF - NIH)
national laboratories

BUDGET

EMPHASIS ON R&D IN ERA OF DECLINING EXPENDITURES

INCREASE IN BASIC RESEARCH

13% R&D

13% R&D / 8% basic

3 PRESIDENTIAL INITIATIVES FROM FCCSET

GLOBAL CHANGE *24%*

HIGH PERFORMANCE COMPUTING AND COMMUNICATIONS *30%*

MATH AND SCIENCE EDUCATION *28% precollege [REPORT]*

materials science & technology
Biotechnology

S&T IN INDUSTRY

TECHNOLOGY POLICY

[REPORT] Industrial policy?

FIRST TIME

CRITICAL TECHNOLOGIES REPORT

— have report for you. [REPORT]

CRITICAL TECHNOLOGIES INSTITUTE

Dr. Franklin.

POLICY FOR SCIENCE ISSUES

PRIORITIES FOR RESEARCH

BIG VS. LITTLE SCIENCE

NEED FOR INCREASED INTERNATIONAL COOPERATION IN MEGA-PROJECTS

SUBCOMMITTEE OF FCCSET

PANEL OF PCAST

JOINT TASK FORCE WITH EUROPEAN COMMUNITY FOR OECD
92 MINISTERIALS

ON BASIC SCIENCE AGENDA AND AGENDA W/JAPAN

Budget Agreement | *entirely new* | *domestic*
within resources | *military*
NRC, HEPAD, NSAC | *international*

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
02a. Biography	Biography (2 pp.)	1/24/91	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: International Files - Country Files
WHORM Cat.:
File Location: Russia - Science and Technology Briefing Book [1991]

Date Closed: 5/6/2010	OA/ID Number: 62069-003
FOIA/SYS Case #: 2005-0336-F	Appeal Case #:
Re-review Case #:	Appeal Disposition:
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.

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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

Yuriy Andreyevich OSIP'YAN
(Phonetic: ahsipYAWN)

USSR

Vice President, USSR Academy of Sciences (since 1988); Director, Solid State Physics Institute, USSR Academy of Sciences (since 1973)

Addressed as: Academician Osip'yan

Highly respected for his work on semiconductors and superconductivity, Yuriy Osip'yan has been active in recent years in scientific and political reform. He served on the short-lived Presidential Council in 1990 as the representative for science and the intelligentsia. In 1988 he was named to the Academy of Sciences' committee tasked with reducing excessive bureaucracy in the scientific process. He has vigorously supported streamlining procedures for publishing Soviet scientific works abroad and for enabling scientists to study in the West. Osip'yan was elected to the Congress of USSR People's Deputies in 1989, and he is a member of the Supreme Soviet's Science Committee.



©

Osip'yan was born on 15 February 1931 in Moscow. He graduated from the Moscow Steel and Alloys Institute in 1955 and later received a doctorate in physical-mathematical sciences. After working at various physics-related institutes for several years, Osip'yan—with other eminent physicists such as Petr Kapitsa—helped found the Solid State Physics Institute during 1962-63; he served as one of its deputy directors until 1973.

Renowned for his discoveries of the impact of light on semiconductors, Osip'yan contributed to the development of a new class of semiconductors designed especially for infrared and visible light receivers. In addition to his research, he has remained active in academia as a professor, department chairman, and dean at the Moscow Physical Technical Institute. He is currently president of the International Union of Pure and Applied Physics.

Osip'yan is a frequent visitor to the United States and Western Europe. He speaks English well. Married, Osip'yan has three children; two are involved in physics, and the third is pursuing a career in cinematography.

20 March 1991

Vladimir Viktorovich YEZHKOV
(Phonetic: YEZHkuff)

USSR

*Deputy Chairman, USSR State Committee
for Science and Technology (GKNT)
(since at least October 1987)*

Addressed as: Dr. Yezhkov

Although he lacks a background in trade or foreign relations, Vladimir Yezhkov handles the international cooperation portfolio for the GKNT, the premier Soviet body for long-term S&T planning and development. Since 1987 he has headed numerous delegations working on bilateral trade or science topics, including the US-USSR Basic Sciences Agreement (signed in 1989) and Trade and Economic Council meetings. Yezhkov has pushed for increased US-Soviet trade, saying in 1988 that US businessmen did not realize the potential of trade with the USSR and that they were ill informed about how Soviet industrial enterprises function. He added that the Soviets' most important task in this area was to help US businesses find customers and suppliers.

Yezhkov was born on 3 January 1947 in Dzerzhinsk in the Russian Republic. His background is in remote sensing, the use of outer space to observe earth resources. He was first identified as a GKNT staffer in 1983. He understands and speaks some English. He is married to a computer expert.

6 April 1990

Grigoriy Arkadiyevich GABRIELYANTS
(Phonetic: gahbree-ellYAHNTS)

USSR

Minister of Geology (since July 1989)

Addressed as: Mr. Minister

A former mining engineer and geologist, Grigoriy Gabrielyants brings a solid, substantive background to his position. Since becoming Minister, he has been outspoken regarding the high cost of mineral prospecting, the slow introduction of new automation technology into industry, as well as the need for financial autonomy in the Ministry. He also appears critical of his country's neglect of the environment and supports a Ministry program to protect mineral fields.



©
Of Armenian parentage, Gabrielyants was born on 2 March 1934 in Baku in the Azerbaijan Republic. He holds degrees in geology and oil and gas prospecting from the Azerbaijan Industrial Institute. Gabrielyants was a researcher, geological survey participant, and college professor before becoming director of the Geological Oil Exploration Institute in Moscow sometime in the 1980s.

Gabrielyants has visited the United States at least once—he attended a geological congress in June 1989. Following the San Francisco earthquake in late 1989, he offered his Ministry's technical assistance in the cleanup effort. He claims to be proudest of his Discoverer of a Deposit award, which he received for discovering the first gas deposit in the Karakum desert, now a major gas producing area.

6 April 1990

Valeriy Yefimovich ANOSHIIN
(Phonetic: ahNOHSHin)

USSR

*Official, State Committee for
Science and Technology (GKNT)
(since at least October 1989)*

Addressed as: Mr. Anoshin

Valeriy Anoshin appeared as head of GKNT's USA and Canada Department in July 1990. He is responsible for arranging international meetings and is a contact point for US officials.

Anoshin was born on 13 September 1941 in the Utmursk region of the Ural Mountains. He has visited the United States several times in the past 18 months, frequently with GKNT deputy chairman Vladimir Yezhkov who holds the international cooperation portfolio for the committee. Anoshin also attended meetings of the Trade and Economic Council in 1989 and 1990. Prior to July 1990 he had worked on energy issues for the GKNT, and had been a delegate to negotiations with the Department of Energy on conventional energy in early 1990. He speaks English.

19 April 1991

Andrey Aleksandrovich GONCHAR
(Phonetic: guhnCHAR)

USSR

*Academician Secretary, Mathematics
Department, USSR Academy of Sciences
(since September 1988)*

Addressed as: Academician Gonchar

As head of the Mathematics Department, Andrey Gonchar represents the department on the Academy of Sciences' Presidium. He is one of about 20 academician secretaries on the approximately 45-member Presidium, which manages the Academy on a day-to-day basis and has some responsibility for approving the Academy budget and allocating resources.



©

(1982)

Gonchar was born on 21 November 1931 in Leningrad. He graduated from Moscow State University in 1954 and then earned a doctor of physical mathematical sciences degree. Since 1965 he has worked at the well-known Steklov Mathematics Institute, becoming a department chief there in 1972. His expertise is in the area of analytical functions and the theory of approximations. He served as a deputy academician secretary for the Mathematics Department of the Academy from 1976 until assuming his current post. He was elected an academician (voting member) in 1984.

Gonchar has visited the United States on several occasions. The Joint Commission Meeting on Basic Sciences held in April 1990 is the first time he has appeared as part of a high-level delegation. He speaks excellent English.

6 April 1990

Igor Sergeyevich GRAMBERG
(Phonetic: GRAHMbehrrk)

USSR

*Director, All-Union Scientific
Research Institute of Geology and
Mineral Resources of the World Oceans
(VNII Okeangeo) (since at least
February 1975)*

Addressed as: Mr. Gramberg

Igor Gramberg oversees the study of terrestrial geology and geophysics relating to the Arctic and Antarctic. Until early 1987 he wore two hats: he headed VNII Okeangeo and was chief of the Northern Marine Geological-Geophysical Scientific Production Association (Sevmorgeo) in the Ministry of Geology.



©

(1983)

Gramberg has been involved in international oceans cooperation since the 1970s. He has made several trips to the United States as a member of a group of experts on geology, geophysics, and geochemistry under the US-USSR Joint Committee on Cooperation in World Ocean Studies. In 1987 he was a member of the Soviet mission to the UN International Organization on Ocean Floor Development. He also attended meetings of the International Law of the Sea Tribunal in 1987.

Gramberg was born on 15 June 1922 in Leningrad. He holds a doctorate in geological and mineralogical sciences and is a specialist in petroleum geology, the geochemistry of sedimentary rocks, and lithology. He was elected a corresponding member of the USSR Academy of Sciences in 1979 and became an academician in 1987.

6 April 1990

Nikolay Al'fredovich PLATE

(Phonetic: plahTEH)

USSR

*Director, Topchiyev Petrochemical
Synthesis Institute, USSR Academy of
Sciences (since at least 1980)*

A specialist in synthetic polymers, Nikolay Plate directs an institute devoted to polymer research. He has been a senior professor of macromolecular science at Moscow State University (MGU) for more than 20 years.

Plate was born on 4 November 1934 in Moscow. He graduated in 1956 from MGU, where he earned a doctorate in chemical sciences. He was elected a full (voting) member of the USSR Academy of Sciences in December 1987. Plate has visited the United States numerous times, including several trips to study at US universities or to participate in inter-Academy scientific exchanges. His most recent visit was in 1987 for a meeting of the Committee on International Security and Arms Control in Washington. He has been published more than 400 times. He has written five books and holds about 90 patents.

Plate speaks fluent French and English. He and his wife have two children and two grandchildren.



©

(1981)

6 April 1990

Aleksandr Sergeyevich SPIRIN

(Phonetic: SPEEReen)

USSR

*Director, Protein Institute,
Pushchino (since 1967)*

Addressed as: Academician Spirin

As director of the Protein Institute from its inception, Spirin has turned the institute into a leading center for research in the biophysics of protein structure and the biosynthesis of polypeptide chains. The Protein Institute (one of four institutes located at the Pushchino Scientific Research Complex), is a good facility by Soviet standards, but lags behind the West. The laboratory conditions and facilities are adequate and most of its equipment comes from the West.



© (1982)

Spirin is an expert in the study of ribosomes. In 1957, he conducted a comparative analysis of deoxyribonucleic acid (DNA) and ribonucleic acid (RNA) in bacteria and predicted the existence of messenger RNA. He established the structure transformations of ribosomes, and in 1963 he formulated one of the basic principles of its structure. During 1970-74, he and his wife, scientist Lidiya Gavrilova, experimentally demonstrated the biosynthesis of protein in structurally modified ribosomes outside the cell. He has written several books on ribosomes. In 1986, he received a State Prize for proving that protein synthesis takes place in the ribosomes.

Career and Personal Data

Spirin was born on 4 September 1931 in Kalinin in the Russian Republic. He graduated from Moscow State University in 1954, where he received a doctorate in biological sciences. He worked at the A. N. Bakh Biochemistry Institute between 1954 and 1973, becoming the head of its Chemistry and Biochemistry of Nucleic Acids Laboratory in 1962. He became a professor of plant biochemistry at Moscow State University in 1964 and chairman of the department in 1973; he is still associated with Moscow State University. He was made a full member of the USSR Academy of Sciences in 1970 and is a member of its Presidium.

Spirin speaks English well and frequently travels to the United States to attend international conferences.

6 April 1990

Valentin Yefimovich SHUKSHUNOV
(Phonetic: shookSHOONuff)

USSR

*Deputy Chairman, USSR State
Committee for Public Education
(since at least October 1988)*

Addressed as: Mr. Shukshunov

In his position as a deputy chairman for education, Valentin Shukshunov has been involved in international activities within the Ministry. In July 1989 he attended a Sino-Soviet educational cooperation meeting in Beijing. The following month, he visited Seattle to help develop a sister university agreement between Eastern Washington University and Kalinin State University. Shukshunov has written extensively on the need to improve research effectiveness at Soviet universities, which have little to show for the large number of scientific personnel on their faculties.

Shukshunov was born on 20 May 1938 in Krasnodar in the Russian Republic. He holds a doctorate in technical sciences. Before assuming his current position, Shukshunov was rector of the Novocherkassk Polytechnical Institute from at least September 1984 until April 1986.

6 April 1990

Yevgeniy Borisovich SMIRNOV
(SmeerNOWF)

USSR

*Chief, Scientific-Technical Progress
Department, USSR Cabinet of Ministers
(since 1989)*

Addressed as: Mr. Smirnov

Yevgeniy Smirnov's department works with national-level S&T organizations--such as the State Committee for Science and Technology, the State Committee for Inventions and Discoveries, and the USSR Academy of Sciences--to draft legislation on science and technology policy. The Department's functions may have changed as part of the January 1991 governmental reorganization.

Smirnov was born on 12 May 1937 in Leningrad. He is a graduate of Leningrad Mechanical Institute. Most of his career has been spent in the electronics industry. During the 1960s he worked as a designer and chief of a design bureau, and later as chief engineer of the Leningrad Electromechanical Factory (LEMZ). In 1976 Smirnov was appointed director of "Soyuzelectronmash," which builds small computers for control systems. From 1986 until 1989 he was deputy minister of the Ministry of Instrument Making, Automation Equipment and Control Systems. In this post he was responsible for the production of such items as digital program control systems and signaling devices. In 1981 Smirnov was awarded a USSR State Prize for helping design a new computer system.

24 April 1991

Petr Yevgrafovich OBOLENTSEV
(Phonetic: oboLENTsev)

USSR

*Chief, Administrative Department,
State Committee for Science and
Technology (GKNT) (since at least 1967)*

As Administrative Department chief, Petr Obolentsev is responsible for the day-to-day running of the GKNT. He has participated in several US-USSR meetings on cooperation in science during the past two decades, beginning with a meeting of the Commission on Cooperation in Science and Technology in 1973: most recently, he was scheduled to participate in the 1990 Joint Commission Meeting on the Basic Sciences Agreement in Washington.

Obolentsev was born on 31 December 1913. He has been associated with the GKNT and its predecessor organization since 1961. He has visited the United States several times in connection with joint committee meetings. His English language ability is unknown.

19 April 1991

Valentin Sergeyevich PAVLOV
(Phonetic: PAHVluff)

USSR

Prime Minister (since January 1991)

Addressed as: Mr. Prime Minister

The choice of a longtime bureaucrat like Valentin Pavlov for Prime Minister is consistent with President Mikhail Gorbachev's recent embrace of the traditional establishment. Pavlov has carried out partial monetary reform and centrally administered price rises. He has proposed an economic stabilization and anticrisis program that reestablishes some central control. In his public statements, Pavlov has indicated that he will take steps toward privatization.



In comments to the trade union newspaper, *Trud*, in February 1991, Pavlov claimed that some Western and Soviet banks were involved in a plot to overthrow the Soviet leadership by flooding the USSR with billions of rubles, causing hyperinflation. He also said that advocates of rapid privatization would "sell out the country at a discount on the auction block" and warned Westerners not to "try to make a fortune" in the Soviet "new world." Former Premier Nikolay Ryzhkov said in a later interview that such statements were sheer "lunacy."

Pavlov was born on 26 September 1937. His father was a driver and his mother a nurse. He holds a doctorate in economics from the Moscow Financial Institute, where he also was his basketball team's leader. During the 1950s he worked as an inspector of bakery plants. He joined the Communist Party in 1962. Pavlov later worked in the Ministry of Finance and rose through the ranks to become deputy chief of the Budget Administration by 1975. In 1979 he transferred to the State Planning Committee as chief of the Department of Finance, Cost, and Pricing. He then served as a first deputy finance minister before becoming chairman, in 1986, of the State Committee for Prices, where he remained until his appointment as Finance Minister in 1989. Referring to his early career, Pavlov has described his frustration with bureaucratic inertia that he observed but could not change.

Pavlov understands some English. In interviews, he notes that he swims at least 600 meters a day and loves dogs and winter scenery. San Francisco is his favorite foreign city; he traveled there during a trip to the United States in 1990. Pavlov recently attended a Russian Orthodox Easter church service. Married, he has a son who is a banker working on international issues.

18 April 1991

Yuriy Alekseyevich RYZHOV
(Phonetic: RIHzhuff)

USSR

*Chairman, USSR Supreme Soviet Committee
for Science and Technologies
(since 1989); Deputy Chairman, RSFSR
Supreme Consultative and Coordination
Council (since February 1991) Rector,
Moscow Aviation Institute (MAI)
(since 1986)*

Addressed as: Academician Ryzhov

Yuriy Ryzhov has emerged as a leading reformer in the USSR Supreme Soviet. He has championed political, economic, and social reforms and has become an adviser to Russian Republic President Boris Yel'tsin. Ryzhov sits on the newly created RSFSR council, which was designed to provide Yel'tsin with a range of ideas on current problems.



©

Ryzhov was born in Moscow on 28 October 1930. He graduated from the prestigious Moscow Physical Technical Institute in 1954 and later earned a doctor of technical sciences degree from MAI, where he has worked since 1960. Ryzhov has written many articles on aerodynamics; in 1982, for example, he wrote an article on problems facing the landing of space probes on Venus, work for which he was awarded a State Prize in 1983. In 1987 Ryzhov was elected an academician of the USSR Academy of Sciences in recognition of his scientific work. He was elected a USSR People's Deputy in March 1989 and two months later became a member of the smaller standing legislature, the Supreme Soviet.

Ryzhov has visited the United States many times to attend conferences and conduct research, including a stint at MIT in 1977. He speaks English. He is married.

18 April 1991

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
02b. Biography	Biography (2 pp.)	4/10/91	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: International Files - Country Files
WHORM Cat.:
File Location: Russia - Science and Technology Briefing Book [1991]

Date Closed:	5/6/2010	OA/ID Number:	62069-003
FOIA/SYS Case #:	2005-0336-F	Appeal Case #:	
Re-review Case #:		Appeal Disposition:	
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]
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(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

Nikolay Grigor'yevich MALYSHEV
(Phonetic: MALihshev)

USSR

Deputy Chairman, RSFSR Council of Ministers; Chairman, RSFSR State Committee for Science and Higher Education (since July 1990)

Addressed as: Dr. Malyshev



Nikolay Malyshev brings enthusiasm and a bent for reform to science and education in the Russian Republic. He is the top official in the executive branch of the RSFSR for S&T matters, and he is a member of an RSFSR group that has begun to overhaul the republic's education system. Malyshev stated in 1990 that, despite years of heavy investment, the command-administrative apparatus had not been able to solve the problems of science and education because freedom had not been included among the resources expended. He said that good scientific research cannot be commanded and that the government's role should be to assist science and education, not to control it. ©

Malyshev traveled to the United States in August 1990 with a delegation that visited several computer and high-tech companies and negotiated the purchase of computer equipment. He said that the RSFSR government was intent on computerizing facilities such as banks and hospitals and on setting up a stock market. Malyshev criticized tariffs placed on US exports to the USSR, commenting that US firms may miss out on the Russian market.

Malyshev was born on 3 July 1945. He is a doctor of technical sciences and is a specialist in automation. He worked at the Taganrog Radio Engineering Institute, a teaching facility, from 1969 until 1990 and was its rector during 1986-90. Malyshev speaks some English.

18 April 1991

Vladimir Pavlovich SHORIN
(Phonetic: SHOReen)

USSR

*Chairman, Science and Higher Education
Committee, RSFSR Supreme Soviet (since
June 1990); Rector, Kuybyshev Aviation
Institute imeni S. P. Korolev
(since at least 1990)*

Addressed as: Mr. Shorin

Aviation hydraulics specialist Vladimir Shorin chairs the 48-member Science and Higher Education Committee, one of 19 joint committees in the Russian legislature. Although the republic Supreme Soviet has devoted most of its time to larger questions of political and economic reform, Shorin has worked to bring key scientific and educational issues to the deputies' attention.

Shorin enthusiastically backed his republic's efforts to create its own Academy of Sciences—a goal the RSFSR government finally achieved in 1991. In September 1990 Shorin had attacked a USSR presidential decree that gave the national Academy legal ownership of its buildings and other properties, most of which are located on Russian territory. He called it “an overt attempt to take away from the Russian Federation its main intellectual potential,” and his committee urged the RSFSR Supreme Soviet to suspend its enforcement within the republic.

As head of an institute, Shorin has a stake in the quality of Soviet education. In December 1990 he wrote an open letter to CPSU General Secretary Mikhail Gorbachev, warning of the critical shortages in the RSFSR of both textbooks and works of fiction. Shorin reminded Gorbachev of the Communist Party's stated commitment to solving nationality problems and developing culture and education. He then called upon *Pravda* to stop publication of several fictional books and to use the paper saved to print textbooks and novels by various ethnic authors.

Shorin has been involved in Soviet aviation hydraulics research for most of his career. During the 1960s and 1970s, his name appeared in several articles on that subject, including a 1967 article entitled “Pressure Oscillation Damper in Hydraulic Lines.” Shorin was elected to the RSFSR Congress of People's Deputies in March 1990 and to the Russian Supreme Soviet three months later. As of June 1990, he was a member of the Communist Party.

18 April 1991

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
02c. Statement	USSR Security Council (1 pp.)		(b)(1)	

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USSR Cabinet of Ministers (as of 11 April 1991)

Presidium

Prime Minister

Valentin Sergeyevich Pavlov

First Deputy Prime Ministers

Vitaliy Khusseynovich Doguzhiyev
General and Urgent Affairs
Vladimir Makarovich Velichko

Deputy Prime Ministers

Nikolay Pavlovich Laverov
Science and Education
Yuriy Dmitriyevich Maslyukov
Defense Industry
Lev Dmitriyevich Ryabev
Fuel and Energy
Fedor Petrovich Sen'ko
Agriculture and Agroindustry
Vladimir Ivanovich Shcherbakov
Economic Affairs

Other Member

Igor' Ignat'yevich Prostyakov
Administrator of Affairs

Standing Bodies of the Cabinet

The State Council for Economic Reform
The Union-Republic Currency Committee

The State Military-Industrial Commission
The State Commission for Fuel and Energy
The State Commission for Extraordinary Situations

Ministers (7 of 37 posts remain vacant)

Agriculture and Food	Vyacheslav Ivanovich Chernoisvanov
Atomic Energy and Industry	Vitaliy Fedorovich Konovalov
Automotive and Agricultural	Nikolay Andreyevich Pugin

Machine Building	
Aviation Industry	
Chemical and Petroleum Refining Industry	Salambek Naibovich Khadzhiyev
Civil Aviation	Boris Yegorovich Panyukov
Coal Industry	Mikhail Ivanovich Shchadov
Communications	Gennadiy Georgiyevich Kudryavtsev
Culture	Nikolay Nikolayevich Gubenko
Defense	Dmitriy Timofeyevich Yazov
Defense Industry	Boris Mikhaylovich Belousov
Economics and Forecasting	
Electrical Equip- ment Industry and Instrument Making	Oleg Georgiyevich Anfimov
Electronics Industry	Vladislav Grigor'yevich Kolesnikov
Finance	Vladimir Yefimovich Orlov
Fish Industry	
Foreign Affairs	Aleksandr Aleksandrovich Bessmertnykh
Foreign Economic Relations	
General Machine Building	Oleg Nikolayevich Shishkin
Geology	Grigoriy Arkad'yevich Gabrielyants
Health	Igor' Nikolayevich Denisov
Information and Press	
Installation and Special Construction Work	Aleksandr Ivanovich Mikhal'chenko

Internal Affairs	Boris Karlovich Pugo
Justice	Sergey Gennadiyevich Lushchikov
Labor and Social Problems	Valeriy Fedorovich Paul'man
Material Resources	
Maritime Fleet	Yuriy Mikhaylovich Vol'mer
Metallurgy	Oleg Nikolayevich Soskovets
Nature Use and Environmental Protection	Nikolay Nikolayevich Vorontsov
Petroleum and Gas Industry	
Power and Electrification	Yuriy Kuz'mich Semenov
Radio Industry	Vladimir Ivanovich Shimko
Railways	Nikolay Semenovich Konarev
Shipbuilding Industry	Igor' Vladimirovich Koksanov
Trade	Kondrat Zigmundovich Terekh
Transport Construction	Vladimir Arkad'yevich Brezhnev
Chairman of State Committees (7 of 10 posts vacant)	
Chemistry and Biotechnology	
Construction and Investment	
Food Purchases	
Forestry	
Machine Building	Genrikh Borisovich Stroganov
Nationality Issues	

Public Education

Science and
Technology
(GKNT)

State Security
(KGB)

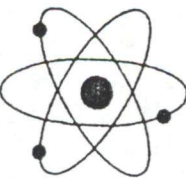
Vladimir Aleksandrovich Kryuchkov

Statistics

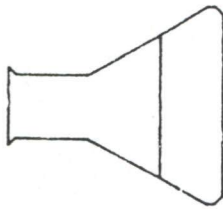
Vadim Nikitovich Kirichenko

USSR ACADEMY OF SCIENCES

Leading Officials



April 1991



President
Guriy Ivanovich MARCHUK

Chief Scientific
Secretary
Igor' Mikhaylovich MAKAROV

Foreign Relations
Main Administration
Chief: Sergey Sergeevich
MARKIANOV

Vice Presidents

Zhores Ivanovich ALFEROV
Konstantin Vasil'yevich FROLOV
Valentin Afanas'yevich KOPTYUG
Vladimir Nikolayevich KUDRYAVTSEV
Nikolay Pavlovich LAVEROV
Anatoliy Alekseyevich LOGUNOV
Gennadiy Andreyevich MESYATS
Oleg Matveyevich NEFEDOV
Yuriy Andreyevich OSIP'YAN
Rem Viktorovich PETROV
Yevgeniy Pavlovich VELIKHOV

Presidium Members
Elected by Academicians

Aleksandr Alekseyevich BOYARCHUK
Aleksandr Yevgen'yevich CHUDAKOV
Nikolay Leont'yevich DOBRETsov
Lyudvig Dmitriyevich FADDEYEV
Viktor Aleksandrovich KABANOV
Leonid Veniaminovich KELDYSH
Nikolay Pavlovich LYAKISHEV
Boris Yevgen'yevich PATON
Vladimir Petrovich PLATONOV
Aleksandr Sergeevich SPIRIN
Valeriy Ivanovich SUBBOTIN
Vladimir Fedorovich UTKIN

April 25, 1991

Departments of the USSR Academy of Sciences

Department	Academician Secretary
Biochemistry, Biophysics, and Chemistry of Physiologically Active Compounds	Dmitriy Georgiyevich Knorre
Economics	Stanislav Sergeyevich Shatalin
General Biology	Vladimir Yevgen'yevich Sokolov
General Physics and Astronomy	Aleksandr Mikhaylovich Prokhorov
General and Technical Chemistry	Oleg Matveyevich Nefedov
Geology, Geophysics, Geochemistry, and Mining Sciences	Vilen Andreyevich Zharikov
History	Ivan Dmitriyevich Kovalchenko
Information Sciences, Computer Technology, and Automation	Stanislav Vasil'yevich Yemel'yanov
Literature and Language	Yevgeniy Petrovich Chelyshev
Mathematics	Andrey Aleksandrovich Gonchar
Nuclear Physics	Aleksandr Nikolayevich Skriskiy
Oceanology, Atmospheric Pysics, and Geography	Leonid Maksimovich Brekhovskikh
Philosophy and Law	Vacant
Physical Chemistry and Technology of Inorganic Materials	Yuriy Aleksandrovich Buslayev
Physical Technical Problems of Power Engineering	Yuriy Nikolayevich Rudenko
Physiology	Pavel Vasil'yevich Simonov
Problems of Machine Building, Mechanics, and Control Processes	Konstantin Vasil'yevich Frolov
Problems of World Economics and International Relations	Vitaliy Vladimirovich Zhurkin

USSR State Priority S&T Programs*
1991

1. High Energy Physics
2. High-Temperature Superconductivity
3. Mars
4. Human Genome
5. New Information Technologies
6. Technologies, Machines and Processes of the Future
7. New Materials
8. Advanced Biological Engineering Methods
9. High-Speed Ecologically Clean Transport
10. Ecologically Clean Power Engineering
11. Resource-Saving and Ecologically Clean Metallurgical and Chemical Processes
12. Combating Widespread Diseases
13. Construction in the Year 2000
14. Controlled Fusion and Plasma Processes**
15. Safety of Population and National Economy Objects in View of the Risk of Natural and Technological Catastrophes**
16. Prospective Telecommunication Facilities and Integrated Communication System**
17. Global Changes of the Environment and the Climate**

*Published by the USSR State Committee
for Science and Technology

**Added since last year

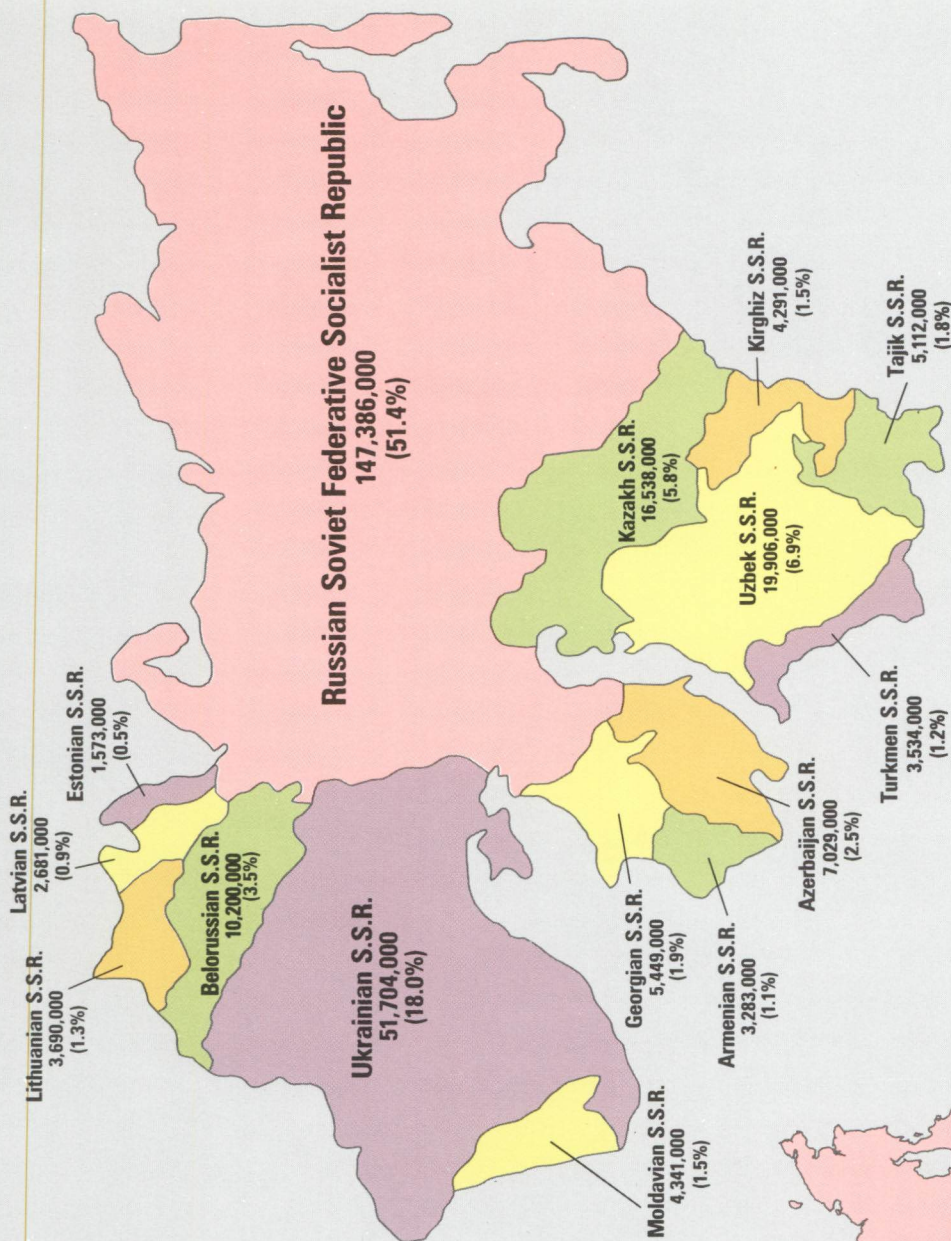


The United States Government has not recognized the incorporation of Estonia, Latvia, and Lithuania into the Soviet Union. Boundary representation is not necessarily authoritative.

Proportional Area Representation of Soviet Republic Populations

Guide to Population Statistics

2,681,000 Union republic population
(Based on 1989 census data)
(1.9%) Percentage of total Soviet
Union population



The United States Government has not recognized the incorporation of Estonia, Latvia, and Lithuania into the Soviet Union. Other boundary representation is not necessarily authoritative.