state & society

US physicists protest in response to Orlov sentence

In response to the trial and subsequent sentence imposed on high-energy physicist Yuri Orlov, a variety of protests by US physicists occurred in the days that followed. These included cancellation of a trip to Moscow for a condensed-matter symposium, postponement of a tour of nuclear-physics institutes in the Soviet Union, cancellation of individual trips to the Soviet Union by Robert Marshak and Nicolaas Bloembergen, a message sent by Norman Ramsey as president of The American Physical Society and a message sent by the directors of the six US high-energy physics laboratories.

Orlov is an accelerator expert who had been working on large storage-ring projects at the Physical Institute in Yerevan. He is a corresponding member of the Armenian Academy of Sciences. He became interested in monitoring Soviet compliance with the human-rights provisions of the 1975 Helsinki Agreement and moved to Moscow, where he became active in publicizing violations of the Agreement. In February 1977 he was arrested. Concern over his fate mounted in the physics community. For example, shortly afterward, 200 high-energy physicists throughout the US and Europe sent a message to Anatoly Logunov, vice-president of the USSR Academy of Sciences (PHYSICS TODAY, May 1977, page 112) expressing concern.

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ORLOV

On 18 May of this year, Orlov was sentenced to seven years in prison and five years of internal exile. When news reached the US, reaction was swift.

Condensed-matter symposium. On 20 May, a US National Academy of Sciences delegation to the VII Joint US–USSR Symposium on Condensed-Matter Theory to be held in Moscow 22–26 May was scheduled to leave for Moscow. The delegation's co-chairmen, William Brinkman of Bell Labs and Elihu Abrahams of Rutgers University, polled the 19 members of the group still in the US and Western Europe to see if they wanted to leave for Moscow the next day. The twentieth member, David Pines (University of Illinois), who is chairman of the NAS committee on US–USSR cooperation in physics, was already in the Soviet Union. Brinkman, recalling his feelings that day, told us, "We want to keep the interactions going. Soviet solid-state theorists are very good and we want to meet with them. But the timing appeared singularly bad."

On 19 May, Brinkman and Abrahams cabled I. M. Khalatnikov, director of the Landau Institute of Theoretical Physics, saying: "It is with great distress that we have to cable to tell you that our entire delegation has been profoundly affected by this week's events in Moscow connected with the trial of Yuri Orlov. We feel strongly about the rights of our fellow physicists and are distressed by the lack of openness in Orlov's trial and the severity of his punishment. There is a strong conviction that the present atmosphere has made useful scientific discussions impossible. We regret deeply that we will not have the fruitful exchanges

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Deutch wants more DOE support for university research

When the Department of Energy officially began operations last October, the Office of Energy Research, reporting directly to the Secretary of Energy, was formed within it. To gain some idea of the research priorities established by OER in its first few months of existence, PHYSICS TODAY recently talked with its director, John M. Deutch, in his Washington office. He discussed with us the respective roles that should be played, as he saw them, by the national laboratories and the universities in carrying out the department's R&D activities. Deutch also told us that he hoped to fund in the FY 1980 budget a university-sited DOE Research Institute.

Deutch, who received his PhD in chemistry from MIT in 1965, worked as a systems analyst in the Office of the Secretary of Defense and as a postdoctoral fellow at the National Bureau of Standards before joining the chemistry faculty at Princeton University in 1966. Four years later he returned to MIT, where he eventually became chairman of the chemistry department. A physical chemist, Deutch has research interests in liquids, transport processes and polymer theory. He is a member of The American Physical Society and is vice chairman of the Defense Science Board.

Universities and national labs. It has recently been alleged that funding by DOE for basic research would increase at the universities, but that this would come at the expense of the national laboratories. Deutch responded to the allegation by first noting the reasons for supporting basic research in the national laboratory system. First of all, basic research is a necessary underpinning to the laboratories' more applied technology programs. Secondly, it supports major facilities (such as neutron sources or synchrotron-radiation sources) at the laboratories that are available to the entire community (including universities and industry). Finally, there is a desire to maintain the excellence of the basic-research effort at the laboratories.

The first two reasons come from the special relationship of the national laboratories to DOE, but Deutch insisted that

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sessments of alternatives to this cycle.

Organization of OER. Deutch has five divisions working under him. There are separate ones for the basic energy-sciences program and for the high-energy and nuclear-physics programs. James Kane heads both of these, although the latter is only in an acting capacity.

Toni Joseph handles OER's field coordination of various laboratories; Joel Snow directs the research policy division, which handles technology assessment projects, interagency science and technology affairs, and the space solar power satellite program, among other things; and Roger LeGassie heads a group that deals with the R&D program issues that are assigned to Deutch.

Deutch pointed out that "My principal job is to be technical adviser to the Secretary, the Under Secretary, and the Deputy Secretary. They hand me assignments constantly to assist in formulating policy in the R&D area on such items as nuclear waste management (which occupies the greatest bulk of my time), fusion, solar R&D and on other such things."

Advisory committees that assist Deutch and his superiors in their policy formulations include the long-standing High-Energy Physics Advisory Panel and the newly formed Nuclear Science Advisory Committee (PHYSICS TODAY, February 1978, page 77). The latter advises both NSF and DOE, which provide nearly equal support in this field. As for HEPAP, Deutch said that he found it "incredibly useful in helping me understand the needs of high-energy physics and how best to go about meeting these needs under realistic budget strengths."

Deutch told us that Secretary of Energy James Schlesinger is expected to establish shortly an Energy Research Advisory Board (nominally housed in the OER) that will give broad external technical advice to the department on all aspects (not just on basic research) of its energy R&D programs. Deutch indicated that it may have subgroups working on a continuing basis in nuclear physics, climatic impact on increased production of CO_2, photovoltaics and other areas.

Some people have alleged that committees such as HEPAP and NUSAC have greatly lessened the technical assistance and advice that the National Academy of Sciences has traditionally provided to various federal agencies. Deutch disputed this allegation and mentioned several studies (on radioactive waste management, on climate and on nuclear alternatives) that NAS is currently doing for DOE.

He also carefully described the respective roles that NAS and advisory committees such as HEPAP and NUSAC should, as he sees it, play: "When we have an advisory committee that is concerned with the composition and direction of a granting program, in my mind it is both more effective and more appropriate to have that advisory committee report directly to the agency. The NAS would be better for studies either in depth in a specific area (for example, climate, effects of CO_2) or for an ongoing technical survey of the field (for example, radioactive waste management." —CBW

Orlov protests

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with our Soviet colleagues which have been the highlights of previous symposia, but the 19 members of the delegation still in the West have voted unanimously that we should not participate in a joint US–USSR symposium at this time. We hope that the near future will bring further scientific exchanges, as we value our past scientific interactions and friendships."

The next day, Brinkman and Abrahams reached Pines in Moscow. Pines, Abrahams and Brinkman expressed the hope that the cancellation would not jeopardize making plans in the fall for a condensed-matter joint research group meeting in the Soviet Union in 1979.

Other members of the US delegation were Michael Cross (Bell Labs), Victor Emery (Brookhaven), Michael Fisher (Cornell), Bertrand Halperin (Harvard), Leo Kadanoff (Brown), James Langer (Carnegie-Mellon), Patrick Lee (Bell Labs), Thomas Lubensky (University of Pennsylvania), Kasumi Maki (University of Southern California), Gene Mazenko (University of Chicago), N. David Mermin (Cornell), William McMillan (University of Illinois), David Nelson (Harvard), Raymond Orbach (UCLA), Joseph Sak (Rutgers), Douglas Scalapino (University of California at Santa Barbara) and Michael Stephen (Rutgers).

Individual trips. Bloembergen, who is a professor at Harvard and a member of the National Academy Council, had been scheduled to visit the Soviet Union as part of the exchange program between the US National Academy and the Soviet Academy of Sciences. On 19 May, Bloembergen cabled A. P. Alexandrev, president of the Soviet Academy, cancelling his visit and elaborated his reasons in a letter mailed that day, which said in part, "As stated in my telegram, the decision to cancel my scheduled visit is based on the fact that a closed trial has been held and a Soviet court has imposed a maximum sentence on physicist Yu. F. Orlov, corresponding member of the Armenian Academy of Sciences. This action deliberately defies and violates the Helsinki Agreement on Human Rights. The concern of many Western scientists about the fate of Orlov, as well as of Ginzburg and Shcharansky, has been expressed repeatedly during the past year through official and private channels. While I realize that the Soviet Academy of Sciences has no political control over these matters, the complete silence and lack of response of your office to the expressions of concern by Western scientists has been conspicuous. I urge you to give these matters your most serious attention, as the closed trial of Orlov has dealt a severe blow to the cause of free scientific exchange . . ."

That same day, Robert Marshak, particle theorist and president of the City College of New York, cabled Logunov, formerly director of the Serpukhov high-energy laboratory, "Closed trial and inhuman punishment imposed on our high-energy physics colleague, Yuri Orlov, make it impossible for me to attend seminar on gauge field theories next week. I especially regret necessity of this decision since I planned to help celebrate Academician Markov's 70th birthday. I remind you that I reopened scientific exchanges between our two countries in 1956 when Markov attended the Rochester high-energy physics conference. I am hopeful that atmosphere will improve sufficiently that such cancellations can be avoided."

A tour of nuclear-physics institutes scheduled to occur in the Soviet Union 24 May–7 June was postponed by the delegation headed by D. Allan Bromley (Yale). The visit, sponsored by the Joint Coordinating Committee on Research on Fundamental Properties of Matter, headed by James S. Kane (US Department of Energy) and I. V. Chuvilo (director of the Institute for Theoretical and Experimental Physics in Moscow), was postponed at Bromley's request after Kane, on 22 May, cabled Chuvilo, "In view of the recent events connected with the trial of Soviet physicist, Yuri Orlov, . . . [the delegation] has unanimously decided to postpone their trip. I concur in this decision and deeply regret the necessity for this action."

The next day, the delegation (consisting of Bromley, Herman Feshbach of MIT, Gerald T. Garvey of Argonne, Earl Hyde of Lawrence Berkeley Laboratory, O. Lewin Keller of Oak Ridge and Joseph Weneser of Brookhaven) wrote a letter to the directors of the institutes they had planned to visit, including Alexandrev as director of the Kurchatov Institute in Moscow, explaining their action. They said, in part, "It is a fact—an unfortunate fact, but nevertheless a fact—that the atmosphere of good will has eroded as a result of events in your country with the consequence that individual American physicists have progressively become more reluctant to become involved in joint programs involving our two countries. . . . American physicists are reacting against a pattern of actions on the part of your government, which they view as repressive, exemplified most recently by the Orlov case. This reaction has now reached an intensity such that we, as individual members of the US nuclear-science community, have decided that it would not be possible, at this time, for us

to achieve our goal of fostering greater communication and cooperation between our scientists and institutions and yours. . . . In postponing our visit, it is of course our strong hope that, in the future, circumstances will change such that we can again take up and build upon the strong bonds of collaboration and understanding already forged in JCC–FPM activities. Critical to this change is the rebuilding of the necessary open and free atmosphere."

Other actions. On 24 May Ramsey, professor at Harvard, in his role as president of APS, cabled Alexandrev and issued a statement that said in part, "The Soviet Union can ill afford to lose the scientific contributions of Yuri Orlov. The 30 000 members of The American Physical Society are concerned with the advancement and dissemination of physics in the United States and in the world community of science. As President of The American Physical Society, I regard both the nature of the trial and the severity of the sentence as serious affronts to human dignity and impediments to scientific progress and cooperation."

That same day, the directors of the six US high-energy physics laboratories sent messages to Alexandrev, Leonid Brezhnev, and the directors of major Soviet high-energy laboratories. The message said, "We have noted with dismay the manner in which our colleague has been first arrested, then held, recently brought to trial and now convicted and sentenced to seven years of hard labor. Such actions will certainly have a chilling effect upon the extensive scientific collaboration between the US and the USSR. We, the directors of the high-energy physics laboratories of the United States urge you to make all efforts to obtain Orlov's release." It was signed by Boyce McDaniel (Cornell), Wolfgang Panofsky (SLAC), Robert Sachs (Argonne), Andrew Sessler (Lawrence Berkeley Lab), George Vineyard (Brookhaven) and Robert Wilson (Fermilab). —GBL

Sachs resigns as Argonne director

Robert G. Sachs has resigned as director of Argonne National Laboratory effective 1 October after five years in the position. He plans to return to the University of Chicago campus "to teach physics and to try to catch up on recent developments in physics, with the possibility of getting my hand into research again. I shall continue to take an interest in the national policy in science and technology, especially energy policy. Of course, I also have a strong interest in Argonne's future and will participate in Argonne affairs to the extent the new University administration desires." (Hannah Gray recently became President.)

The search for Sachs's successor is under way, with a search committee headed by William B. Cannon, vice-president for business and finance, University of Chicago.

During his five years of directing Argonne, Sachs told us, there has been a growing interest in identifying the role of the national laboratories, particularly those multiprogram laboratories that were developed under the AEC. He found it important during the reorganization from AEC to ERDA and ERDA to DOE to alert the new agencies to the significance of basic research as the underpinning of the laboratories. During the period, he said, pressure on the national laboratories to show relevance even in fields identified as basic research led to a shift in 35% of Argonne's basic-research activities to topics that have a specific relationship to energy technologies. Now he feels there is a need to re-emphasize the lab's strength in basic research. —GBL

NSF supports academic–industry research ties

The National Science Foundation plans to increase funding for the support and encouragement of cooperative research between universities and industrial firms. Such research would focus on fundamental scientific questions rather than on technological development.

NSF criteria and established peer-review procedures will be used to judge proposals on their scientific excellence. Major consideration in the eligibility of proposals will include the extent of independence (that is, absence of interlocking relationships) among the cooperating institutions, and the extent to which the proposed research may be expected to make a long-term contribution toward product and/or process innovation. Cost sharing of funds, laboratory space and/or personnel services by the participating organizations is desirable.

Further information can be obtained from Ronald E. Kagarise (202-632-4240), James H. Brown (202-634-1553) or Daniel Hunt (202-632-4166), the deputy assistant directors of, respectively, NSF's directorates for mathematical and physical sciences and engineering, for biological, behavioral and social sciences, and for astronomical, atmospheric, earth and ocean sciences; or from Richard Green (202-632-7426), director of operations for NSF's Applied Science and Research Applications directorate.

Committee studies problems in industrial innovation

President Carter has established an inter-agency committee to conduct a comprehensive 14-month review of issues and problems related to industrial innovation. It will examine how Federal policies on the economy, taxes, regulations, procurement and foreign relations affect the innovation process in the private sector. It will also consider the effects of Federally funded research and development. The committee, composed of 15 major Federal department and office heads, will be headed by the Secretary of Commerce.

In making the announcement, the White House noted that in recent years, private-sector R&D has concentrated on low-risk, short-term projects directed at improving existing products; at the same time, emphasis has decreased on longer-term research that could lead to new products and processes.

The President's science and technology adviser, Frank Press, speaking at an MIT meeting on innovation in mid-May, noted that the new study is not the first to examine some of the same issues. "But what I believe is significant, is that this is the first time that the government will examine these issues at this level, and in the depth that we expect. In addition, I believe that the fact that the resulting policy options will come directly to the President will lead to important actions that will ultimately have their effect on industrial innovation."

Press said that while the Federal government seeks ways to encourage industry to do more exploratory R&D, "I think there is little doubt that the bulk of fundamental research will remain in the universities." He noted that conditions, however, are changing. "These may call for different and better ways to support research there, and to assure opportunity for young scientists and engineers."

in brief

The annual Survey of Enrollments and Degrees, conducted by the Manpower Statistics Division of the American Institute of Physics, is now available. Copies of the report, based on data from nearly 100% of the physics and astronomy degree-granting departments, may be obtained by writing: Susanne D. Ellis, American Institute of Physics Manpower Statistics Division, 335 East 45 Street, New York, N.Y. 10017.

Kenneth E. Boulding, a specialist in economics, social dynamics, international and general systems, is the new president-elect of the AAAS.

Nominations to the National Inventors Hall of Fame are being sought. Nomination forms and additional information may be obtained from The National Inventors Hall of Fame, c/o Ralph King, Lowe, King, Price and Markva, Suite 210, Building 1, 2001 Jefferson Davis Highway, Arlington, Va. 22202. Deadline is 1 August. □