

but more fundamental successors, are directed toward the ultimate nature and origin of matter, and hence to everything on or off this Earth.

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9/86

## Supercomputer access

I wish to express my strong opposition, as a member of APS for some 34 years, to the APS statement on supercomputer access (PHYSICS TODAY, December 1985, page 53) and to the editorial by Robert L. Park on the same topic (December 1985, page 144). Let there be a referendum, a vote by the membership on this topic, before APS issues such a sweeping, controversial statement!

Justice Oliver Wendell Holmes of the US Supreme Court once remarked, "To think is not less than to feel!" Having been an associate professor of physics I can understand the instinctive reaction by many physicists at universities that any restriction intrudes into the "pure" intellectual life of a community of scholars isolated from the world. However, this cherished independence from the rest of America is wholly imaginary.

Let me point out that the tax-free status of university property, buildings and gifts and the enormous direct and indirect largess from all levels of government as well as the private sector imply a responsibility too. The elected representatives of all the people may not be the favorites of the generally very liberal physics faculties but they do represent the people of the United States. If they conclude, on the basis of overwhelming evidence, that the Soviet Union's direct, long-term, hands-on access to the latest US supercomputers is a threat to our national defense, whether the computers are on campus or off, then APS is irrational to assert its undying opposition to restrictions on access for nationals from countries that are obvious potential enemies.

The danger of the enormous military build-up by the Soviet Union and its satellite countries—giant Typhoon submarines as part of a submarine fleet three times the size of ours, new SS-24 and SS-25 ICBMs (the latter in violation of sworn treaties), the huge Krasnoyarsk phased-array radar (an obvious violation), the six-year-old war to decimate the heroic Afghan people, the vast Soviet war supplies flowing to Angola, Vietnam, Cuba, Nicaragua, Ethiopia (while we send food they send guns), Libya, the PLO and so on—should make even the most isolated physicist aware that we must protect

any lead we have left.

Fortunately, for the time being, the Soviets appear to have trouble making the large supercomputers so useful for designing and analyzing complex military high-technology systems, such as missiles and nuclear weapons. That is why the KGB would be delighted with long-term access to Cray and other machines for Soviet-bloc scientists, the majority of whom are forced to carry out KGB missions when abroad. That is why Evgeny Velikhov is pushing so hard for a "joint controlled thermonuclear-fusion-reactor project"—to enable the Soviets to have hands-on access to the superb Magnetic Fusion Energy Computing Center Cray supercomputer. (This is the same Velikhov who, while heading the huge Soviet Star Wars effort, blandly assures us that SDI is futile and unworkable.)

It is the same thirst for long-term Soviet access to US supercomputers that causes Roald Z. Sagdeev to ask audaciously for a satellite data link from a US supercomputer to the USSR to do some "fundamental research." Of course if some US citizen wished to run an extremely interesting Soviet basic-research calculation, that could be arranged, but in my opinion, hands-on access by Soviet-bloc scientists should be barred until the international situation changes drastically.

Do any APS Council members remember the ongoing intense persecution of our brilliant, freedom-loving Russian colleague, Andrei Sakharov? Do they recall the persecution of Anatoly Shcharansky and Yuri Orlov and the torture of Soviet psychiatrist Anatoly Koryagin for daring to deny that a dissident worker was insane? Are the sufferings of hundreds of refusenik scientists and tens of thousands of others in the Gulag, so eloquently portrayed by Alexander Solzhenitsyn, to be forgotten in a mad rush to aid the Soviet war machine by providing untrammled access to supercomputers? Do APS members still care about Soviet denial of the most elementary human rights? (I hope and believe they do.) Let's have the referendum.

**HOWARD D. GREYBER**  
Department of Defense  
1/86

Washington, DC

**THE EXECUTIVE DIRECTOR OF THE APS OFFICE OF PUBLIC AFFAIRS REPLIES:** It is made clear in the opening sentence of the statement on supercomputer access that the views are those of the elected Council of The American Physical Society. In 1968 the APS membership decisively rejected a proposed constitutional amendment that would have required "any matter of concern to the society" to be brought to a vote by the entire membership via formal resolu-

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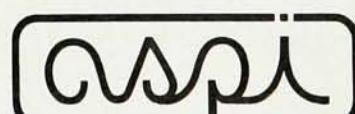
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tions. The rejection of that amendment eliminated a constant stream of referenda on public issues by the APS membership, but it was never intended to prevent the council from issuing statements and taking action on matters of public policy. Indeed, it is no longer possible for scientific societies to remain aloof from such issues when the free exchange of scientific results and ideas is constrained by considerations of national security. The pace of scientific progress is governed by Federal budgets, and the conduct of research is required to conform to a myriad of government regulations.

The composition of the APS Council changes each year, but its position has remained firm that excessive secrecy involving controls on unclassified meetings, publications and facilities threatens the very system that has given us our technological lead (*PHYSICS TODAY*, January 1984, page 99, and July 1985, page 128). This is a concern that is shared by many thoughtful persons in the Department of Defense. Indeed, at a recent meeting of the DOD-University Forum, Donald Hicks, undersecretary of defense for research and engineering, publicly expressed skepticism over the need for a no-exceptions ban on the use of academic supercomputers by visiting scientists and students from proscribed countries (*Chronicle of Higher Education*, 14 May 1986, page 1). Hicks is not generally regarded as soft on academic scientists.

The council's recent statement goes beyond the issue of restricting access to supercomputers to the more general question of the precedent that such a policy sets for other unclassified research facilities. Will the government next seek to dictate who may use the molecular-beam-epitaxy facilities on our campuses or the hundreds of other items of equipment whose shipment to proscribed countries is banned?

ROBERT L. PARK

Office of Public Affairs

The American Physical Society

Washington, DC

5/86

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I am writing in reference to your articles on supercomputer access and the proposed restrictions on Warsaw Pact students and researchers.

It seems the problem in allowing them unrestricted use is the fear that we will lose our technological and military advantage over their countries. The government's attempt to protect information transfer may stunt scientific discovery by discouraging some of the best minds and new talent that can help us with our scientific and technological innovation. By creating

these "walls" for the sake of secrecy we will undermine the system that keeps us in the lead. Further restrictions will greatly affect the vigor and vitality of the open environment necessary for progress and productivity in the scientific, industrial and academic communities.

Our concern should be the knowhow the visiting researchers gain from direct participation in the research projects, not the explicit findings and reports.

In controlling these channels of communication we sacrifice our only hope for long-term security to gain a short-term strategic advantage.

BRANDEE L. TELFORD

3/86

Rexburg, Idaho

## Negotiating arms with Russia

Robert S. Flum Sr of the Space and Naval Warfare Systems Command has written in his letter (February, page 97) a variation on President Reagan's "evil empire" theme. He says the Soviets are convinced that "the only way for 'Mother Russia' to be safe is for her to be totally in control of the world," and that the Russians are optimistic about their prospects: They expect that somehow the will of the United States will "weaken and atrophy such that a Soviet takeover would be virtually bloodless." The Soviets think these things not because they are communists but because they are Russians—the Soviet view "comes from centuries in the past."

All of these statements are presented without evidence. They seem to be remotely related to Karl Marx's prediction that historical forces would replace capitalism with a socialist economy just as capitalism had replaced feudalism. (This prediction is the context in which Nikita Khrushchev said, "We will bury you.") Mikhail Gorbachev, in his recent address to the 27th Communist Party Congress, stated that "conditions have taken shape in which confrontation between capitalism and socialism can proceed only and exclusively in forms of peaceful competition." The best reason for believing that Gorbachev meant what he said is that his statement is true, certainly for the nuclear powers and for countries protected by them. Neither the Soviets nor the United States could forcibly impose its will on the other unless one side developed an effective "Star Wars" shield for its attack before the other side developed countermeasures, a scenario that I think is outside the realm of reasonable possibility. The price to the attacker would be the same as the price to the attacked: annihilation. If we follow Flum's advice not to negotiate any "agreement, pact or political

accommodation" with the Soviets we will be courting Armageddon.

It is likely that there are Soviet officials with similar but reverse attitudes to those expressed by Flum. Letters from "refusenik" Soviet physicists Nahum Meiman and Armen G. Khachaturyan in the same issue (page 98) describe irrational Soviet views on the subject of national security. An agreement between the Soviet Union and the United States can hardly be established on the basis of mutual trust, but nuclear-disarmament agreements can be established on the basis of verifiable mutual advantage. It is to the advantage of each side to survive.

EDGAR VILLCHUR

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3/86  
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FLUM REPLIES: The statements in my letter concerning the attitude of "Mother Russia" toward long-term success in ideological and military conflict with the United States were taken from a lecture given at a Military Operations Research Society meeting at the US Naval Academy, Annapolis, Maryland, in the spring of 1982, and were made by a military historian working for the CIA. This is the only evidence I can offer. I believe those statements to be true.

The basic thrust of my statements is quite simple: The Soviets cannot be trusted to honor any agreement that conflicts with their basic purpose—to make the world safe as they see it for themselves. Therefore we cannot permit an agreement or political accommodation to interfere with our effort to defend ourselves from an attack. Hence, if we intend to honor our agreements we must be sure that no agreement we ratify will result in our becoming vulnerable either now or in the future.

If there were a totally fail-safe way to establish a verifiable nuclear disarmament agreement—and I do not believe that there is such a technique—I would be for it. Short of that, I feel we must continue to protect ourselves and plan against future Russian offensive or defensive developments that could endanger our country. Words are relatively easy to produce, by Gorbachev or by anyone else. But I cannot trust a people or a government that pursues political and military actions such as those that resulted in the current political environment in Poland, the Afghanistan war, the physical partitioning of Berlin and so on. Trust and mutual advantage are difficult to reconcile with Russian actions when the country opposing the USSR is vulnerable to political or military attack.

The real, long-term effect of SDI on this conflict between the USSR and the United States has yet to be seen or