Eastern Europe: Missing an Opportunity

There are many proposals, but U.S. government agencies have little money to initiate new scientific projects with Eastern Europe or fund additional exchanges of researchers

GERALD FEDER, a geologist at the U.S. Geological Survey in Reston, Virginia, and Philip W. Hall, a nephrologist at Case Western Reserve University School of Medicine in Cleveland, believe they may have solved a mystery that has been puzzling epidemiologists for decades: Why are kidney diseases so prevalent in the Balkan states? In a collaborative project with Yugoslav scientists, they found highly suggestive evidence that extensive deposits of poor quality lignite in the region may be to blame. Aromatic hydrocarbons appear to have leached out of the coal into the water supplies of some Yugoslavian towns. And where concentrations of these contaminants are high, the incidence of kidney disease is high. Now Feder and Hall are hoping to nail down the link by expanding their efforts in Yugoslavia, and extending them to Bulgaria and Romania, where the same type of coal is found.

But they have hit a financial snag. "Everyone who hears about the project says, 'Oh, how interesting, how wonderful,' but nobody has any money for us," says Feder. It's not surprising that he and Hall are having trouble. The USGS is competing with at least 12 other agencies for a mere $2 million—a piddling pot of money administered by the State Department for scientific cooperation with Yugoslavia and Poland. For cooperative projects in the rest of Eastern Europe it is catch as catch can.

A year after democratic revolutions began to sweep through Eastern Europe, many U.S. scientists are eager to take advantage of the new openness by conducting joint research projects or by bringing Eastern European scientists over to work in their labs. But most scientists who look to the federal government for support for such efforts get the same response: There is no money.

Agency budgets for this fiscal year were mostly approved before events started unfolding in Eastern Europe, and preparations were already well along for the 1991 budget requests. The result: no substantial increases are planned. And neither the Bush Administration nor Congress has moved to short-circuit the ponderous budget process by shifting funds into new scientific programs with Eastern Europe. The one exception is an effort to provide economic assistance and a modest amount of technical support for Poland and Hungary—the first two Eastern European countries to democratize.

"Eastern Europe today is a target of opportunity," says W. E. Gordon, foreign secretary of the National Academy of Sciences and emeritus professor of space physics at Rice University. "But the U.S. government is not providing the support—financial and otherwise—that the fledgling democratic leaders of the Eastern European countries need."

The Bush Administration says it is eager to get going. White House Science Adviser D. Allan Bromley said in a speech at the National Academy of Sciences last month that "we in the United States will be looking for opportunities to integrate science and technology cooperation with the President's broad foreign policy goals to encourage the independence and democratization of Eastern Europe." But there is considerable debate about just how to go about it.

Deborah Wince-Smith, assistant secretary of commerce for technology policy, said in an interview with *Science*, for example, that U.S. commercial objectives should play just as strong a role as foreign policy goals in any scientific and technical dealings with Eastern Europe. Wince-Smith argues that the U.S. government, instead of just providing grants or loans for scientific cooperation, should insist on two-way exchanges where both sides have to ante up, if not with cash, then with some technical expertise. The federal government is also divided on how quickly and how completely to lift restrictions on high-tech exports to Eastern Europe (see box on p. 21).

The most conspicuous response to the opening up of Eastern Europe so far is the Support for East European Democracies (SEED) Act for 1989. First proposed by the Bush Administration as a $350-million financial support program for Poland and Hungary, it was warmly embraced by Congress, which bumped the funds up to $928 million. Most of the money will be spent on economic stabilization and developing bureaucratic structures to support a market economy. But some of the programs will

Eastern Europe's Scientific Work Force

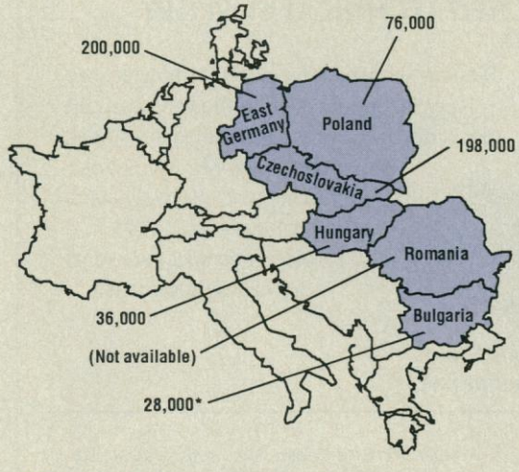

*Figure for Bulgaria is for scientists only.
The Romanian government considers data from the Ceausescu era unreliable and is compiling new figures.

Wealth of talent. *Eastern Europe has a relatively large scientific work force in part because large numbers of scientists and engineers are required to synthesize reagents and make laboratory equipment (see p. 23). Figures are total numbers of scientists and engineers employed in research and development. [Source: Compiled by staff intern Sarah Williams from data for 1986 and 1989 supplied by Eastern European embassies in Washington, D.C.]*

involve scientific or technical projects. The Department of Energy and the Environmental Protection Agency will spend about $40 million in and around Krakow on environmental projects: retrofitting a power plant with clean coal technology, conducting several water improvement projects, and establishing a network of air pollution monitoring stations. In addition, SEED Act funds will permit EPA to open a regional center in Budapest to facilitate U.S.–Hungarian cooperation on environmental problems.

The SEED Act also authorizes $5.5 million over 3 years to support the U.S.–Polish Science and Technology Agreement and $2.5 million for the U.S.–Hungarian Science and Technology Agreement. The money for these exchange pacts is administered by the State Department and will support projects proposed by individual investigators or government agencies.

Despite the SEED Act, the State Department is having trouble getting its hands on even the minuscule amount authorized. Although the budget for 1990 should be $4 million, Congress has forced the State Department to hold some spending to 1989 levels, so State has only $2 million in hand for Eastern Europe, and right now that money will only barely cover existing programs with Poland and Yugoslavia, with no money for Hungary and nothing for any new ventures anywhere.

Not every cooperative venture goes through State, however. While some agencies—like the USGS—are required to carry out joint programs under State Department auspices, others have memoranda of understanding with a counterpart agency in an Eastern European country.

The National Science Foundation, which funds collaborative projects proposed by individual U.S. investigators and provides hard currency that foreign scientists need in order to work in the United States, is also stretched financially. NSF has only $600,000 in the current fiscal year to support joint research directly and another $875,000 that it provides to the National Academy of Sciences' Eastern European exchange program. And there is little prospect of huge increases in the future. "We are drowning in paper and telephone calls" from researchers inquiring about funds to do joint projects with Eastern European scientists, says Gerson Sher, who heads NSF's office of Eastern European programs.

It's a similar story at the National Institutes of Health, which has been the primary financial supporter of Eastern European research. NIH has made direct awards totaling $3 million per year to projects in Eastern Europe, and there are several institute-to-institute cooperative projects. Last week, the Polish health minister was at NIH to discuss progress in the collaborative program for research on heart disease. Both countries have a high incidence of heart disease, but from 1970 to 1982, while deaths from heart disease was dropping 35% in the United States, they were climbing 60% in Poland. Researchers hope to pinpoint the differences in diet, life-style, and medical care that would explain these statistics. But any significant expansion of the program from the U.S. side will have to wait until the 1992 budget, unless Congress decides to weigh in with more money than the Bush Administration has requested in its 1991 budget.

In contrast to the slow and uncoordinated federal response to the democratization of Eastern Europe, the World Bank has already decided to invest large amounts of money in Eastern Europe. With loan programs already in place with several Eastern European countries, "the World Bank has become a major player in science in Eastern Europe," says Glen Schweitzer, head of the National Academy of Sciences' Soviet and Eastern European programs.

Even before this last year's dramatic political change, the bank had made loans totaling about $2 billion to Hungary, $360 million to Poland, and $5.1 billion to Yugoslavia. (Bulgaria and Czechoslovakia have only recently applied for membership in the bank.) Although most of these loans are not directly intended for scientific projects, they often have technical components.

Will the United States eventually become a major player in funding Eastern European science? Congress is now working on the 1990 version of the SEED Act (known colloquially as Super-SEED) that is expected to add Czechoslovakia to the group of nations receiving money and favored treatment. Other nations will probably be eligible if they are deemed sufficiently democratic and are moving toward a market economy. But no step either being taken or contemplated by the U.S. government seems destined to take the fullest advantage of the opportunities that the new access to scientific and technology talent in Eastern Europe seems likely to provide. ■ **JOSEPH PALCA**

Exchange Controls

Cezary Ambroziak, the science and technology counselor at the Polish Embassy in Washington, laughs apologetically when asked how many Polish scientists are in the United States. He says he's not sure. New freedoms have meant Polish universities are no longer obliged to inform ministries about the travel plans of their faculty members. But Ambroziak is sure of one thing: the numbers are growing.

Indeed, consular sections in U.S. embassies in Eastern Europe are being overwhelmed by a flood of new applications, far more than they can handle quickly. Joseph Eberly, a nuclear physicist at Rochester University, says his Eastern European colleagues are experiencing waits of weeks or months in obtaining travel documents from the State Department. Rodney Huff of the State Department office of cooperative science and technology programs admits there have been delays, but adds that in some cases the problem is compounded by restrictions placed by host governments on the number of State Department personnel that can staff Eastern European embassies.

Before they can get visas, Eastern European researchers first have to have an offer of a position in a U.S. lab and hard currency to pay local expenses in the United States. But postdoctoral positions at U.S. universities for this year had already been filled before Eastern Europe opened up. "Our problem is that we are not flexible enough to take them [postdoctoral candidates] straight away," says Charles Hosler, senior vice president for research at Pennsylvania State University, who says his own university hopes to bring over at least one or two Romanian mathematicians. "We can offer positions but no financial aid to these excellent candidates. We're going to have to make special money available."

How valuable would Eastern European scientists be to U.S. labs? Perhaps as a result of being forced for years to work with outdated instruments, Eastern European scientists "turn out to be better experimentalists, more sensitive to the equipment," says John O'Connell, chairman of the Department of Chemical Engineering at the University of Virginia. So many U.S. scientists are hankering for those special talents in their labs. But without an infrastructure in place to support exchanges, they will remain limited. As Hosler warned members of the U.S. National Science Board at a recent meeting, "A lot of talent may get discouraged about coming here." ■ **J.P.**

With reporting by Rachel Nowak, a graduate student in the science writing seminars at Johns Hopkins University.