

SOROS FUND LAUNCHES 'NOAH'S ARK' WITH \$100 MILLION FOR SCIENCE IN FSU

While the US and the European Community dither about how best to help the disintegrating science enterprise in the former Soviet Union, George Soros, a Budapest-born financial speculator who lives in New York and London, just went ahead and did it. He announced on 9 December that he is setting up a new foundation that will contribute \$100 million of his personal wealth in this year and next to support basic research and science education in the FSU—an amount that exceeds by far any ongoing government or private programs for such purposes. In fact, Soros claims his gift equals 20% of Russia's total annual science budget at the ruble's current exchange rates.

Called the International Science Foundation for the FSU, the new fund is designed to provide emergency relief for researchers and to try to reverse the brain drain of scientists to the West. At a news conference in the boardroom of the National Academy of Sciences in Washington, where he divulged his plan, Soros spoke of his pessimism about the future of Russia and asserted, "Only Western assistance can prevent Russia from slipping into a black hole."

Soros characterized his \$100 million foundation as a "Noah's ark" that can rescue many of the best and brightest scientists from almost certain personal and professional disaster as the FSU's independent republics attempt to avert economic and social collapse. (For articles on the plight of science in the FSU, see *PHYSICS TODAY*, May 1992.) The three groups most at risk, Soros stated in his remarks at the academy, are the elderly, the disabled and the scientists. A senior physics researcher in Russia now earns up to 5000 rubles per month (a paltry \$12 at today's exchange rates)—less than a bus driver's pay. Inflation has increased by 1200% since price controls were lifted in Russia one year ago, and the GNP has dropped about 22%.

The purpose of his foundation,

Soros said at the academy, is to reverse the deterioration of scholarly professions, to preserve the traditions of scientific excellence where it exists and to create a more open system of basic research and science education in the newly formed states of the FSU. He asserted that his program would enable scientists to apply for grants directly, bypassing the old bureaucratic system of institutes and academies that until now have controlled research funds. This, he said, will hasten the demise of the science *nomenklatura*, who customarily receive their research grants based on privilege or party loyalty.

Selecting the most creative

The foundation will disburse its awards on the basis of competitive merit reviews, similar to the procedures used by US agencies such as the National Science Foundation and the National Institutes of Health.

Just before Soros spoke in Washington, Boris Saltykov, Russia's minister of science and technology, told members of the news media in Moscow that the proposed funding procedures are certain to shake up the traditional scientific establishment in the FSU. "The new approach will select only the most creative people," he said. "It will undoubtedly lead to a shift in power away from the *apparatchiks* to the scientists themselves."

Many specifics are still being worked out by the foundation's three organizational bodies, whose members are appointed by Soros. The first is an advisory council under the chairmanship of Frank Press, president of the US academy. The council consists of 60 to 70 prominent US and FSU scientists who were involved in early discussions about the foundation's mission and functions. The second body is called the temporary board because its 12 members must submit their resignations in June, when Soros will select a permanent board. The temporary board, led by Joshua Lederberg of Rockefeller Uni-

versity, includes Sidney Drell of SLAC, Herman Feshbach of MIT, and Mikhail Voloshin of the University of Minnesota, among others. Soros also has named an executive committee to organize the foundation's operations, at least until June, when a permanent committee is to be selected. The current executive committee is headed by Soros's close friend Alexander Goldfarb, a Russian emigré biologist at Columbia University. Its members are Drell, Lederberg, Harley Balzer of Georgetown University, Felix Browder of Rutgers, and another emigré biologist, Valeriy Soyfer of George Mason University.

If the foundation appears improvised, it is because of Soros's haste in getting things going. A statement of principles has undergone several drafts, and its description of the way the foundation works is subject to further changes. In its current state, though, neither the council nor the board nor the executive committee will allocate funds to natural science programs. That job will fall to the foundation's administrative staff operating in the FSU. The job of the scientist bodies is "to respond to and fund a broad range of scientific activities based on merit and scholarly excellence," says the statement.

In what is termed Phase I, covering the first six months, the foundation will deal with emergency cases by disbursing about \$6 million in direct cash stipends to 6000 to 7000 scientists (with a cap of \$600 per individual) and in supplements to small grant programs already set up by scientific societies or other foundations. Decisions about other allocations have changed several times. The latest plan calls for \$2 million to be available for telecommunications equipment and services between researchers in the FSU and other countries, another \$2 million for subscriptions to Western journals and for maintaining libraries and \$1 million to support travel by FSU scientists to conferences outside their own country.

Applications for small emergency grants are already being accepted. Such grants will be based on the simplified abbreviated forms now in use by the American Physical Society, the American Astronomical Society and other organizations for peer review in the US and are meant to parallel NSF and NIH programs in support of collaborative US-FSU projects, except that the money will go directly to the FSU principal investigator and not the US one. The proposals, to be submitted in English, will be weighed on such criteria as the researcher's record and references. Funding will be retroactive to 1 January.

Changing the fund allocations

Phase II starts on 1 February 1993, when the foundation begins accepting research proposals (with deadlines of 1 April and 1 November) for grants amounting to \$80 million. Of this total, \$60 million is to be allocated under the present plan for individual researchers and their scientific instruments, \$10 million for group research projects and \$10 million for special programs to be chosen at the discretion of the foundation's board. In the past two months the board has made several changes in funding allocations and procedures, in particular shutting off any payments through institutions in the FSU but allowing grants to individual investigators to include up to 15% more to cover such institutional overhead costs as heat, electricity and other services. The foundation is allocating \$9 million for operational costs, which would cover the costs of assembling peer reviewers, convening board meetings, visiting FSU laboratories and administering the fund.

In an interview the day after his announcement, Soros acknowledged that his philanthropy is not sufficient to save all science research and graduate education in the FSU. Setting up his foundation is essentially a call for action by Western governments and private groups to come up with additional efforts. "The unique qualities of the natural sciences in the former Soviet republics are of universal value and must be preserved at almost any cost," he said. "To abandon scientists of world standards in those lands because of economic difficulties would be a loss for mankind. History would not forgive us."

His new foundation, he observed, "demonstrates what can be done." While the foundation may become a permanent institution, he hopes that it functions to "disperse seed money" for the growth of more robust, open



Soros: Attempting to save FSU science.

and influential scientific communities in the FSU. Soros is confident that scientists continue to be in the vanguard of democracy and stability in the FSU, as they were in the last decade of the Soviet Union. He holds that prophecies of economic and social disasters can be self-fulfilling if nothing is done to avoid crises. The time for appraisals of the situation in the FSU is over, Soros argues. "A relatively small amount of money could change the direction of events," he said. "It would be a crying shame if we did not at least try to do something."

The foundation has been championed by President-elect Bill Clinton, who sent Soros a letter that he read aloud at the academy news conference. In it Clinton stated: "As their own societies are transformed to democracies and market economies, many scientists no longer are able to find productive work at home, and the International Science Foundation for the FSU will serve a critical role of helping them during this period of transition." Complimenting Soros, Clinton wrote: "In embarking on this timely project, you have seized upon one of the most important issues we face since the end of the cold war. Your wisdom and generosity will advance the cause of peace, prosperity and democracy."

At the academy and in our interview later, Soros hailed the efforts of the APS, AAS, the American Chemical Society and private groups such as the Sloan and MacArthur Foundations in committing funds for science in the FSU. "It is clear that we are not reinventing the concept," he told us. Indeed, last spring APS and AAS initiated programs to donate scientific

journals and small grants to physicists, physics centers and libraries in FSU states (see *PHYSICS TODAY*, May 1992, page 56). Since APS first appealed for contributions, it has received about \$115 000, of which \$30 000 came from nearly 1300 members who responded to its first appeal early last year. The APS total, along with matching funds from the Sloan Foundation and gifts from the Soros and Philip Mayor Foundations and from NSF, enabled APS to raise nearly \$1 million to directly support science in the FSU.

The AAS, in fact, was first to put funds into the hands of FSU astronomers, using peer review methods to identify them. Since last April, the society has made some 400 grants worth a total of nearly \$40 000. The Soros-APS program has transferred funds for another 400 grants to scientists in the FSU republics. These grants average about \$500 in US dollars per individual scientist. Additional funds for a total of 240 grants also have been transferred to banks in the FSU for allocation by Soros Foundation officials at the rate of about 100 grants per month. Largely through the efforts of Feshbach and Irving Lerch of New York University, who also directs APS's international scientific affairs and who met with Saltykov in Moscow last June, the grants are tax exempt—though the exemptions are not yet backed up by a specific act of Russia's parliament or any directive by the Yeltsin government. Ukraine, Georgia, Estonia and Lithuania have given oral assurances that they will allow tax-free direct grants in US dollars. What's more, because of the pressure by Saltykov, Russia's Ministry of Science, Higher Education and Technology Policy has promised matching grants to the laboratories where the scientists work.

Inventing the rescue operation

APS has established disciplinary review panels to consider scientific proposals. To the surprise of the reviewers, most of the 5000 grant applications have not come from young scientists, as many had expected, but from established researchers in dire need.

The idea of a rescue operation for scientists in the FSU was conceived by Lev Okun of Moscow's Institute for Theoretical and Experimental Physics and Voloshin in August 1991, at the time of the abortive coup that resulted in the resignation of Mikhail Gorbachev and the elevation of Boris Yeltsin as the Soviet president. When the plan was outlined in a phone call to Drell at Stanford later

that month, the originators found Drell "most enthusiastic," Voloshin recalls. Okun was left to fill in many of the details of an international foundation to save FSU science, including searching for possible sponsors who would put up at least \$100 million per year (see PHYSICS TODAY, June 1992, page 67).

In September 1991, Okun, a former member of CERN's scientific advisory committee, discussed the plan with such prominent European physicists as Carlo Rubbia, director of CERN, and Volker Sorgel, director of DESY. They in turn described it in letters to several European leaders in late 1991. The idea was subsequently adopted by France's President François Mitterrand, who pledged his government's assistance in putting together a fund of 100 million ECUs (about \$150 million) to support Russian scientists in about 5000 research groups ranging over many disciplines. In his official statement, Mitterrand went on to solicit contributions from other members of the Group of Seven industrialized nations. As Mitterrand envisioned it, the fund would be administered by an international foundation, modeled on NSF or France's own Centre National de la Recherche Scientifique, which would distribute grants of about \$20 000 to some 5000 research groups after peer review. Since then, the foundation has been transformed into an association involving all European Community member states and other countries who decide to join by kicking in funds (see PHYSICS TODAY, September, page 63).

Encouraging other ventures

Foundation officials say they will amass about 24 million ECUs (about \$36 million) when the organization begins operating early this year. Though the association failed to attract the US and Japan, it has gone on to encourage cooperative research ventures with laboratories and institutes in Western Europe, and while the intention is to benefit science in Eastern Europe the money could be spent in the West for research equipment, for instance, or telecommunications to assist scientists and their institutions. Up to now, however, no funding has been forthcoming from this association.

By contrast, Soros has already distributed \$100 million through foundations he set up in former Communist countries of Central and Eastern Europe over the last five years. These foundations support educational, cultural and economic restructuring projects, however, not scientific oper-

ations. As an expression of his goal of furthering freedom in former Communist states, Soros founded in 1990 The Central European University, offering postgraduate programs in history, economics, government and social sciences at campuses in Prague and Budapest.

Born in Budapest in 1930, Soros emigrated to London in 1947 and attended the London School of Economics, where he took a class with John Meade, who later won a Nobel Prize in economics in 1977 ("though I didn't get much out of that course," he told us), and attended lectures by Harold Laski, a political economist and Labor Party leader. After his graduation in 1952 he became a friend and disciple of LSE's Karl Popper, the noted philosopher of science. He moved to New York in 1956 and established himself as a Wall Street investor. He is now president of Soros Fund Management and chief investment adviser to Quantum Fund, which is domiciled in the Netherlands Antilles island of Curaçao. Quantum has grown from \$4.8 million at its founding in 1969 to a family of four funds valued by Soros's own reckoning at \$7 billion. US investors are prohibited by law from participating in such offshore funds

that are not regulated by the Securities and Exchange Commission. Soros's own holdings are said to total more than \$1 billion.

Although he is lauded as a savior of science in Eastern Europe by many US and Russian scientists, Soros is sometimes criticized as a scoundrel by bankers and the press in Great Britain. He speculated against Britain's pound sterling during the currency market turmoil last September. On 16 September, a day known as Black Wednesday in Britain, the Bank of England spent about \$25 billion to defend the pound and the Bundesbank bought almost \$5 billion in pounds to maintain the EC's exchange rate mechanism. Soros was so confident the pound would be devalued that he borrowed heavily in order to bet \$10 billion against sterling, and at the end of the day, by his own admission to *The Times* of London, made about \$950 million. He told the newspaper he made \$1 billion more out of further chaos in the currencies of Italy and Sweden and in the Tokyo stock market. *The Times* later called him in a front page headline "The Man Who Broke the Bank of England." Soros's associates say he was simply "maximizing his profits."

—IRWIN GOODWIN

EUROPE REORIENTS SPACE SCIENCE PROGRAM WITH RUSSIA IN MIND

For those who love to hate manned space activity, but not necessarily for European space enthusiasts, the latest developments at the European Space Agency are good news: At a ministerial meeting held in Granada, Spain, on 9–10 November, it was decided to further delay development of Hermes, the space plane proposed by France's aerospace industry, to reorient the manned space program to emphasize cooperation with Russia, and to sharply reduce spending on microgravity research in space. At the same time, as an ESA release puts it, "the agency will negotiate with NASA on the exploitation costs of the international space station, aiming to achieve a firm ceiling, within which a significant portion of the agency's contribution will be made 'in kind'..."

While European plans for a free-flying platform for the space station were indefinitely deferred, a data-relay satellite system received full approval, and planning for an attached pressurized module remains more or less on track—"means to

provide full funding [for the APM] will be clarified, with specific measures being taken over the next few years to align development with the financial resources available."

Pressure to curtail ESA commitments came primarily from Germany, which has been strapped for funds because of reunification and world recession. At an ESA meeting held in Munich in 1991, Germany made known that it would have to reduce its planned contributions to the agency between 1992 and 2000 from 20 billion marks to 16 billion. Before the Granada meeting Germany let it be known that further reductions to around 11 billion marks would be necessary.

But even in France, the largest contributor to the ESA program and the main advocate of the Hermes shuttle and Ariane V launcher programs, manned space activity has come under unprecedented attack in recent months. Early last fall an evaluation committee established by research minister Hubert Curien recommended scrapping Hermes and es-