enough field evidence to refute Szymanski's arguments, but even more turned up in recent weeks, after the report went to press. Continuing excavation on the mountain gave researchers a deeper look at some of the mineral veins Szymanski interprets as conduits for mineral-laden fluids rising from great depth. The trenches reveal the veins petering out at depth, just as they would if they had been filled by rainwater seeping from above, says panel member Mary Lou Zoback of the USGS in Menlo Park. "There's no longer any possibility of debate," she says.

Szymanski is unmoved by such conclusions. "I have used the data. I think the academy panel has used their beliefs," he told *Science* the day after the release of the NRC report. "They looked like a bunch of fools. Nonsense like that you don't expect from the National Academy of Sciences....There are things in the Earth that the National Academy report didn't dream of."

Disappointed with the "irresponsible science" done in the project, Szymanski said he would resign on 20 April. As his legacy, he leaves the latest 600-page version of his hypothesis, a follow-on to a 1000-page 1989 report. Undaunted, project manager Gertz has said that the project will now forge ahead.

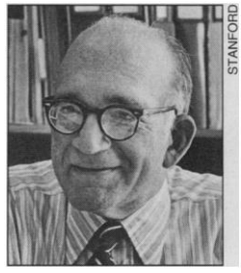
–Richard A. Kerr

AID TO RUSSIAN SCIENCE

A European Plan Gathers Support

When Russian physicists appear at international conferences, their non-Russian colleagues used to say, they have a way of stealing the show with their keen theoretical insights. But since the recent breakup of the Soviet Union, ex-Soviet physicists have been making a different kind of stir: by showing up to plead for help. As economic chaos sends average salaries plummeting to a pathetic $15 per month and cuts off funds for equipment and overhead, Russian science, according to its beleaguered practitioners, faces extinction. Which is why the French government last week endorsed a comprehensive plan—hatched in the European particle physics community—to aid Russian science.

Swayed by appeals from such prominent European physicists as CERN director Carlo Rubbia and DESY director Volker Sorgel, French President Francois Mitterrand pledged his government's assistance in putting together a fund of 100 million ECU's ($120 million), which would fund Russian scientists in all disciplines. In his official statement, Mitterrand went on to solicit contributions from the rest of the European Community, the United States, Canada, and Japan. The fund would be administered by an international foundation—modeled on the U.S. National Science Foundation—which would distribute the money to research groups.


STANFORD

The comprehensive initiative contrasts with the piecemeal rescue efforts being launched in the United States by individual foundations and businesses (*Science*, 27 March, p. 1632). It also differs from U.S. programs to convert the weapons industry to peaceful purposes in that its target is fundamental science. "Our plan will be complementary to weapons reconversion," says CERN physicist Robert Klapisch.

The goal, say advocates, is to preserve an entire research community. With salaries for physics professors now dipping below the subsistence level, there is little choice for Russian researchers but to leave or quit science, says Russian physicist Michael Veloshin, who recently moved to the University of Minnesota. The consequence of continued dispersal, say other physicists, would be the loss of a unique research culture. "The Russians have their own footprint, trademark, signature," says Stanford University physicist Sidney Drell. If they all move to the West, he says, "they will become absorbed and homogenized into the Western style of physics."

The European high-energy community is keenly aware of the potential loss because prominent Russian scientists have long been working in close contact with the major labs—CERN in Geneva and DESY in Hamburg. And so when Russian particle physicists sprang into action to rescue their field after the failed coup last August, they were able to enlist powerful European allies, including Sorgel and Rubbia. The Russian and European physicists presented their plan by letter to several European leaders in late 1991, and Mitterrand was the first to bite.

"The Russians have their own footprint, trademark, signature."

—Sidney Drell

One selling point of the plan is its parsimony. When prominent Russian physicists gathered last month at La Thuile, in Italy, to discuss the aid plan with Sorgel, CERN's Klapisch, and Superconducting Super Collider lab director Roy Schwitters, other scientists expressed surprise at how little the Russians were requesting: about $100 million, to be distributed as $20,000 grants to about 5000 research groups. The current goal exceeds that figure, but not by much.

To make the most of that money, though, Russian physicists say their country's scientific community also needs other kinds of aid. "Charity is important only in the short term, but strategically it is not a solution," said Russian physicist Alexander Skrinsky. One challenge is shedding the Soviet-style inefficiency and stifling bureaucracy that still plagues Russian science. "The main problem is the rigid hierarchy," says Russian physicist Lev Okun. To overcome it, he and Skrinsky both advocate integrating Russian science with the West. That would force the ex-Soviets into healthy, Western-style competition.

A happy few. Okun explains a related challenge for the aid program: "giving the money to those really working." Adds Veloshin, "There is a lot of dead wood"—so much, in fact, that the Russians say saving just 5% of current research programs would preserve a valuable fraction of Russian science. Getting the money to the right 5% will mean the program will have to "bypass the traditional bureaucratic channels," says Klapisch, relying on the foundation's own peer-review board. And for the future, he says, the Russians will need lessons on Western-style peer review.

For the moment, the plan faces its biggest hurdles nearer to home, in the effort to enlist donors. The French are waiting for expressions of support from other countries before they promise any specific amount. So far, the signs are encouraging. At the La Thuile meeting, Okun announced that the Finns have already agreed to put up $1 million and set up a computer link between Russian research institutes and their counterparts in Western Europe. The Italians are also getting enthusiastic about the rescue effort. Italian television and newspapers covered the discussions at La Thuile, drumming up national interest by calling the plan the "Rubbia initiative" and featuring pictures of the Italian Nobel laureate, who is a much bigger celebrity in his home country than is the average Nobel physicist in the United States.

European physicists such as Klapisch and Sorgel hope their message will quickly turn that enthusiasm into ECUs, and win other countries as converts as well. It's a matter of self-interest, says Klapisch: "A foundation where the best of Russia and the West can work together will be very fruitful."

–Faye Flam