Down to the Bone: East German Science Gets Cut

Post-unification reductions will be much deeper than most had thought. Nine in 10 eastern researchers could lose jobs

Berlin—ON 12 FEBRUARY, AN UNUSUAL sight was seen in east Berlin: 2000 scientists on the march. The marchers had taken to the streets to protest what they consider a hostile takeover by the west. "We studied, we did research, and now we get fired," read one placard, as scientists joined a long list of professions angry at the cost of unification. For most of those groups, the cost is the same: Many of their members will lose their jobs.

East German researchers have known for some time that the post-unification employment picture was going to be bleak. Their labs were overstaffed by a factor of 3 compared to counterparts in the west, and previous predictions were that 3 of 4 researchers in the east might lose their jobs (see *Science*, 6 April 1990, p. 23). But the first of a series of official reports assessing science in the east is now out and the reality will be even more painful than predicted: 9 in 10 scientists there could be out of work. Making things worse, the increase in the German federal science budget for 1991—the first to include funds for both east and west Germany—is smaller than expected, and since the eastern states are practically bankrupt, they are unable to add much to the federal funds for science.

Government support for research in Germany comes partly from the federal government and partly from the states. Unofficial figures, confirmed by the Ministry for Research and Technology, predict a maximum increase in the federal science budget of 6.8% to DM 8402 million—an amount that represents only a small increase over the total that had been forecast for west Gernman science alone in 1991. In the west, that will squeeze scientists gently, but it leaves almost nothing for the east, where the states can barely afford anything for research.

Of 147,000 East Germans employed in R&D, 24,000 were on the staff of the Academy of Sciences, which runs some 70 research institutes. The federal government had agreed to pay their salaries, but only until the end of 1991; after that, they're on their own. Another 99,000 worked in the laboratories of the giant industrial combines. A few may find jobs in the slimmed down companies being taken over by the west. Only 14,000 were in universities, with a final 10,000 in other institutions. As part of the unification treaty the Wissenschaftsrat, or science council, which advises the federal and state governments, was asked to evaluate research in the east. Last week the council published its first reports, recommending new roles for the Academy's Central Institute of High Energy Physics, located just outside Berlin in Zeuthen, and three biomedical institutes in the Berlin suburb of Buch.

The high energy physics institute should become part of DESY, the German institute for particle physics in Hamburg, says the science council. But only 140 of the 240 scientists will be able to stay at DESY/Zeuthen, as the outpost will now be called. The institute benefited from its established international contacts with HERA at Hamburg and CERN in Switzerland and the high caliber of its work.

Job losses at the three biomedical institutes—for Molecular Biology, Cancer, and Cardiovascular Research—will be much higher. The science council agreed that the 3 "numbered among the most renowned facilities in their respective fields" and recommended welding them into a single Center for Biomedical Research, along the lines of the National Institutes of Health. But there will be places for just 600 of the 1500 staff.

The science council has suggested "a new structure" for the campus at Berlin-Buch, a "private foundation" with funds from the federal government, the state of Berlin, and private companies. Details have still to be worked out, but the flexibility envisaged by the science council is in distinct contrast to the rigidity of research establishments elsewhere in Germany.

Other former East German labs that are not going to be merged with western research institutions don't have many options. One possibility would be for them to find shelter under the wing of either the Fraunhofer Society (FhG), which runs 38 institutes of applied research in the west, or the Max Planck Society (MPG), which looks after pure research. Prospects there, however, are even bleaker.

The Fraunhofer Society has drawn up plans to establish 17 facilities for contract research in the east; 7 may end up as fully fledged Fraunhofer institutes; the rest will become outposts of existing institutes in the west. In all, a total of between 700 and 800 scientists—of the 99,000 in industrial research—are likely to join the FhG payroll if the society's governing body approves the scheme on 20 April.

For example, until August of last year the Center for Microelectronic Research in Dresden, a subdivision of the eastern industrial giant Carl Zeiss Jena, employed 1300 staff. Only 120 are likely to survive under the auspices of the FhG. The Central Institute for Electron Physics in Berlin will probably suffer a similar fate. It has 650 staff working on plasma physics and gallium arsenide semiconductors. Few will stay, because the FhG already has an institute devoted to gallium arsenide technology in Freiburg. "I do not believe we can afford to run this expensive technology at two different sites in Germany," said Alexander Imbusch, head of an FhG planning group.

The Max Planck Society is also planning only a very modest expansion in the east. If it were to increase in proportion to the increase in population after unification, the MPG would fund 15 new institutes in the east. In fact it has no immediate plans for any new institutes. "In what fields? Where are the people?" asks Herbert Walther, vice president of the MPG, who has serious doubts about the eligibility of eastern scientists for financial support under the traditional MPG standards.

Hans Zacher, president of the society, is slightly more politic, but he carries the same message. "The Max Planck Society," Zacher

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The march of science. *Researchers protesting job cuts stream by former Academy of Sciences building in east Berlin.*

says, "is determined to support science on the same basis that has proven effective over 40 years in West Germany, that is, on the grounds of excellence." Nevertheless, the MPG will fund a few projects in fields not yet covered by the society. It will also establish research groups within east German universities, funded for 5 years and linked to existing institutes in the west. The MPG senate meets on 8 March to scrutinize 41 proposals. It will fund only 12, adding just 160 jobs to the MPG's western staff of 13,000.

The outstanding problem for the MPG is that "funding is not yet secured," says Dietmar Nickel, who administers part of the MPG's eastern program. Money for MPG institutes is split evenly between state and federal governments. But the states in the east are broke. "We simply don't know where the state share should come from," Nickel told *Science*.

The budget crisis facing eastern states will reverberate through every research establishment, because all German science depends to a greater or lesser extent on state funds. Saxony and Berlin, with several universities and more than half of the academy's 70 institutes, will be hardest hit. Help will have to come from Bonn and the western states, or the universities will "collapse" soon, according to Saxony's minister of science, Hartmut Häckel

Even if cash can be found, the announcements so far from the science council, the FhG, and the MPG would secure a mere 1600 positions for east Germany's 147,000 researchers. But Heinz Riesenhuber, federal minister of research, told *Science* he is hopeful that the final tally will be higher. "It will not stay at that. I do not know the final numbers yet, but I expect them to be much higher." He looks beyond the few career opportunities offered by the FhG, the MPG, and the National Research Institutes, and sees some promising signs, though there will have to be what he calls "structural change."

Scientists and engineers should become entrepreneurs, Riesenhuber said. And an increased technical infrastructure in the east—environmental and health agencies, bureaus of standards, factory inspectorates, and the like—will absorb scientific personnel. "We need a lot of competence in these areas, and it would be idle for the professional intelligentsia to wait in their institutes until the end of the year, when funding is to cease. They should grasp their opportunities," Riesenhuber told *Science*. "Conditions [for entrepreneurs] have never been as good as they are now."

Riesenhuber would also like to see more university research. Previously, the academy and state industries carried out research, while the universities were responsible primarily for teaching. Neither the universities nor the states that fund them are likely to welcome enlargements to their already bloated faculty, but Riesenhuber insists overstaffing has been in administration and teaching, not in research. "Some of this has to be slimmed down, while other areas—science—have to be nursed back to health. This is exactly what has been denoted by structural change."

In spite of Riesenhuber's generally upbeat outlook, however, the prospects for east Germany's researchers remain grim—and their mood varies between truculent and plaintive. As a sign carried by protestors in the recent Berlin march said: "Mister Riesenhuber, my professor and I want to work." ■ RICHARD SIETMANN

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Researchers Protest User Fees at National Labs

A small item buried in the national energy plan unveiled by the Bush Administration last week has been causing consternation in the national labs and among some industrial researchers. It is a proposal to charge all users of facilities such as Brookhaven National Laboratory's synchrotron light source a hefty fee to cover the costs of operating the facilities.

The proposal would overturn a long-standing policy of allowing basic researchers—whether from universities or industry—free access to national lab facilities. The labs currently charge user fees only to corporations that conduct proprietary research.

The impetus for the change comes from Capitol Hill. Last fall Congress inserted a provision into the final budget resolution instructing the Department of Energy (DOE) to study ways to recover the operating costs of its research facilities and to report back on potential options this spring. DOE apparently is leaning toward imposing user fees. It included a reference to the possible imposition of such fees in the energy plan, though it gave no specific details of how they might be levied.

Even before the energy plan was released, individual researchers, research organizations, and national lab officials made known their distaste for the idea. Martin Blume, deputy director of Brookhaven, points out, for example, that even though industrial users don't pay directly to conduct nonproprietary research, they often bear the expense of building and maintaining research instruments. At Brookhaven's light source, he says, some $120 million in hardware was paid for by outside groups.

Argonne National Laboratory director Alan Schriesheim raises a different objection: "Charging federally supported university groups would merely shift research costs from one federal agency to another," he wrote in a 12 February letter to DOE. And Arthur Bienenstock, director of the Stanford Synchrotron Radiation Laboratory (SSRL), complained in a 6 February letter to Energy Secretary James Watkins' Task Force on the DOE National Laboratories that user fees "are not likely to return very much money to the Treasury, but are likely to damage both long-term corporate research and valuable collaborations between graduate students and corporate researchers."

The bottom line in most of the complaints is that imposing user fees will simply discourage university and industry groups from conducting research at the labs. Paul M. Horn, an IBM researcher who chairs the users' organization for the Advanced Photo Source being constructed at Argonne, warned Watkins in an 8 February letter, for example, that "U.S. industry is willing to spend a fixed dollar amount on basic research; if that research becomes more expensive, industry will simply do less of it." And Horn's statement is not just an idle threat: Hewlett-Packard notified SSRL's Bienenstock on 6 February that it will sharply curtail research at his facility if DOE imposes user charges. "For an experiment such as we typically propose, the total beam-time charge would be about $30,000," said Stephen Laderman, head of the company's x-ray diffraction research program. "At this rate, the number of experiments worth bringing to SSRL would decrease markedly," he said.

DOE will give Congress its recommendations in April, and after that the appropriations committees will decide whether they should be implemented. At that point, it will become clear whether the complaints have been heard. ■ MARK CRAWFORD

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