EASTERN EUROPE

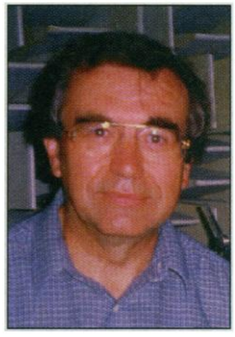
Czech Research Review to Leave No Lab Unturned

Unlike hundreds of institutes elsewhere in Eastern Europe, those in the Czech Republic no longer keep deadwood on the payroll. During a brutally honest evaluation begun after the Velvet Revolution in 1989, the Czechoslovak Academy of Sciences lost some 6500 scientists and nonessential staff from its institutes—more than half the academy's ranks—and closed 22 institutes. Some good scientists took higher paying jobs in industry, while mediocre ones were fired or forced to retire. "Many bad scientists had to leave," says Václav Pačes of the Institute of Molecular Genetics in Prague.

Now Czech science officials hope to put the rest of the country's R&D workforce—some 25,000 researchers at 27 universities and several institutes run by government ministries—through a similar evaluation by panels of foreign and Czech scientists. The review—expected to be announced in the next few weeks—could result in a two-tier university system, with the top tier receiving the lion's share of future university research funds. "What ultimately may appear are research universities," predicts Josef Syka, director of the Institute of Experimental Medicine in Prague and vice chair of the Czech government's R&D Council. The council, chaired by new Education Minister Jan Sokol, is currently drafting plans for the review, which is about to be submitted to top government officials for final approval.

Although it might seem like bitter medicine, the review is supposed to help cure a long-standing ill in many former East Bloc countries: the poor quality of university research. "The totalitarian regime supported research mainly in the academy," explains Pavel Klener, a vice rector of Charles University in Prague. Better funding, coupled with the fact that institutes were shielded from political pressures that plagued universities, drove top scientists to elite academy labs—depriving universities of talent.

Even in the academy, the Czechoslovak government—like other communist regimes—built up a sprawling research infrastructure that often prized loyalty and production over competition and innovation, says Václav Hořejší of the Institute of Molecular Genetics. But during an evaluation from 1989 to 1993, the Czech Republic slashed the academy's bloated payroll and closed low-grade institutes. Although science spending has failed to keep pace with inflation—state R&D spending in 1998 is targeted at $256 million, or 0.48% of gross domestic product—the research quality at the remaining institutes, as measured by publications in Western journals, appears to be on the rise. "There is no doubt that the number of papers has increased significantly," from 0.86 papers per person in 1990 to 2.12 in 1996, says Rudolf Zahradník, president of the Academy of Sciences of the Czech Republic (ASCR).



R. STONE

Raising the bar. Syka predicts review will improve university science.

To bring the universities up to par, science officials have long been trying to tap into the institutes' expertise. The first step came in 1993, when the government said it would pay researchers to transfer from institutes to universities; however, only 250 people made the jump, hardly enough to raise the overall level of science, says Syka. The R&D Council and Education Ministry launched a more successful 5-year program in 1996 to establish premier university labs; so far, nearly 100 labs have been spun off. "Collaboration between individuals is thriving," says ASCR official Petr Kratochvíl.

Now, says Syka, the time has come for more radical measures to deal with the disparity between academy and university research and to focus scarce resources on the best university labs. The plan, he says, is to have panels of visiting scientists review all state-financed labs, including those in universities and ministries. Even academy institutes will get reviewed again, mainly to serve as a yardstick against which other labs can be measured. Syka says the R&D Council hopes to persuade Western European scientists, perhaps under the auspices of the European Science Foundation, to participate.

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Windfall? Powerhouses such as Charles University could get lion's share of research funds after review.

No matter how they fare in the review, universities won't have to brace for the staff cuts the academy experienced—in part because student enrollment is booming, having risen from under 100,000 in 1990 to 158,000 today. "The number of faculty will probably remain the same," says Syka.

But the evaluation could still have some painful consequences. Syka and others predict that a handful of universities, including Charles University, that possess considerable scientific talent will receive a disproportionate share of research funding; many other universities could be forced to close down unproductive labs and give those faculty members more teaching duties. "It is possible that some universities could be relegated to second-class status," says Tomas Cermak, a vice rector of the Technical University, Ostrava. "But I am sure that it will not be our fate." Academy researchers, meanwhile, look forward to the chance to be evaluated against their university peers. "The academy, or at least most institutes, has no reason to be afraid of such a review," says Karel Segeth, director of Prague's Mathematics Institute.

Indeed, boosting the quality of university research could be in the long-term interest of the academy, because the two sectors may soon be forced to work even more closely together. For decades, academy institutes have issued candidate-of-science degrees, equivalent to Ph.D.s, to their grad students. But a bill now in parliament would end this Soviet legacy by allowing only universities to grant advanced degrees; to host students, academy institutes would have to sign formal agreements with universities. Universities are lobbying fiercely for the measure, but the academy is dismayed. "An excellent institute could be completely in the hands of small university departments often of mediocre scientific performance," contends Pačes. The review could ease concerns by identifying strong university labs with whom academy scientists might team up to train grad students.

Syka is confident that at a minimum, the review "will improve the quality of teaching" at the top universities—the proving grounds of the next generation of Czech scientists—by raising the level of their research. Such an improvement is sorely needed, says Peter Sebo of the Institute of Microbiology in Prague, who points out that it's hard to teach science in labs lacking modern instruments and supplies. "Go to a biology course in a university and one student is pipetting while the others are watching." Czech officials hope the review will be a good tonic for such apathy.

–Richard Stone