EXPANDING EU
▶ SLOVENIA

Money and Mentors Hold Onto Young Researchers

LJUBLJANA, SLOVENIA—When biochemist Vito Turk strolls around the modern research campus where he works, he sees a healthy mix of younger and older scientists. "We don't have a major 'brain drain' problem," boasts Turk, who directs Slovenia's premiere basic-research center, the Jozef Stefan Institute. "Slovenian scientists tend to return home." For a country the size of New Jersey, with a population of only 2 million, Slovenia—the first republic to break away from the former Yugoslavia—has a remarkably resilient research sector.

Much of the credit for training—and retaining—a talented pool of young Slovenian scientists goes to the government's "2000 Young Researchers" program, which provides research "mentors" and laboratory work for graduate students. It is Slovenia's innovative way of plugging the brain drain that has severely hurt research throughout post-communist Europe. "In this part of Europe, many talented young people who formerly studied the sciences are now pursuing careers in economics, law, and business," says Robert Blinc, a physicist who is vice president of Slovenia's science academy. He says the Young Researchers program "has helped revitalize Slovenian research institutes."

According to the research ministry, a mere 3% of new Ph.D.s leave Slovenia for good, although many of them do postdoc research abroad. Under the Young Researchers program, the government provides funds to universities and research institutes for M.A. and Ph.D. students, covering the costs of their university education and their salaries as researchers. "It gives students both a mentor and a place to work," says biomedical engineer Renata Karba, a 1995 graduate of the program who is now a counselor to Slovenia's science minister. "Mentors want as many of these young Ph.D. students as possible, because they are good research assistants."

The main architect of the Young Scientists program, Boris Frlec—a chemist who is now the nation's foreign minister—told *Science* that it "has been successful beyond our original expectations. It was meant to revitalize the then-aging Slovenian research community and, indeed, has yielded so far about 1900 highly trained young researchers." That includes nearly 80% of all students who got their Ph.D. in Slovenia last year, when the program—which covers all fields of sciences, including social sciences—accounted for about 20% of the Research Ministry's total budget.

"We don't have a major 'brain drain' problem."

—Vito Turk

Most scientists say it is worth the high cost. Dragan D. Mihailovic, a physicist who returned to the Stefan Institute after studying at Oxford University, calls the program "extremely effective," adding: "The biggest benefit is that young Slovenian researchers gain great self-confidence from the experience of working side by side with some top-flight scientists."

But there is a downside to the 10-year-old program. Milos Komac, who heads the ministry's Division for Scientific Programs, says, "the problem is finding appropriate jobs for these talented young people." While the goal was for two-thirds to go into industrial research, Komac says, most new Ph.D.s "tend to stay at institutes and universities." Adds Komac: "We are now producing more Ph.D.s than we can decently employ." **–ROBERT KOENIG**

EXPANDING EU
▶CZECH/SLOVAK

Bringing Diverging Paths Back Together

BRATISLAVA—The breakup of Czechoslovakia into the Czech and Slovak Republics 6 years ago today interrupted seven decades of joint scientific effort. Since then, Slovak and Czech scientists have, in most cases, formed separate research organizations pursuing different national research policies as the two nations—partners from 1919 to 1993—set off on diverging paths. Last year, the Slovaks found out just how far those two paths had diverged: When the European Union (EU) selected five central European nations as fast-track candidates for membership, it included the Czech Republic but left out its Slovak neighbor. In a few years' time, the Slovaks may find themselves almost entirely surrounded—apart from a short border with Ukraine—by EU members.

"Slovak scientists ... need support from Western Europe."

—Peter Biely

In some ways, it is unfair to directly contrast Czech and Slovak science, as the Czech Republic is a larger country with a longer scientific tradition and a stronger industrial sector. But comparisons are inevitable. According to data produced by Philadelphia's Institute for Scientific Information on the citation impact of scientific papers from 1993–97, Slovakia ranked last out of 33 European nations (excluding former Soviet republics). The Czechs ranked only slightly better at 29th. Since the Czech-Slovak split, the Slovak research budget has lagged behind and Czech researchers have taken part in more EU-funded research projects.

While both the Czechs and Slovaks have restructured their academy institutes—cutting employment roles to half their 1989 levels—they both continue to struggle with tight science budgets, low salaries, and—to a greater extent in Slovakia—the loss of young researchers to the west. A recent report on Slovak science by the consulting firm Coopers & Lybrand, commissioned by the EU, found that "there is little cooperation between research institutes and the universities or industry, and organizational structure is often poor." In contrast, the consultants found the Czech Republic—despite some nagging problems—to be "relatively advanced in its scientific transformation."

While some Slovak

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