

RESEARCH FUNDING

Polish Science Reforms Bring Fear and Hope

If at first you don't succeed, try, try again. That's a good motto for those now seeking to reform how Poland funds science. In the 1990s, the country set up an independent agency that would hand out grants to individual scientists selected by peer review and would evaluate Poland's universities and research institutes. In 2002, Poland suddenly dissolved the body. "It was a step backwards," apparently motivated by the government's desire to exert more control over who got money, says Maciej Żylicz, executive director of the Foundation for Polish Science (FNP) in Warsaw.

Now it's back to the future. After lobbying by FNP, the Polish Parliament this month began voting on legislation creating a new national agency charged with distributing competitive grants for frontier research. The proposed National Center for Science (NCN), to be located in Krakow, is meant to be free from political pressures and would use an international peer-review system modeled on those of the European Research Council and the U.S. National Science Foundation. NCN would also earmark at least 20% of its budget to grants for scientists under age 35. Michal Kleiber, president of the Polish Academy of Sciences (PAN), sees in NCN the type of reform the country's scientific community needs. "No doubt the system in Poland is, in spite of many attempts in the past, still not competitive enough," he says.

NCN is expected to soon be approved, but the agency and other science-related reforms under consideration have met with some resistance and skepticism. Money for research should first "be increased two, three, four times for 2 to 3 years, then you can regulate who can use those reasonable [amounts of] money in a good way," says Julian Srebrny, a nuclear physicist at Warsaw University who is a member of the Committee for the Development of Science in Poland and the Polish trade union Solidarity.

Twenty years after the fall of the Iron Curtain, Poland is still grappling with economic problems stemming from its communist past. According to Eurostat, the Polish government's R&D budget in 2007 was 0.32% of its GDP, representing just 1.03% of the overall budget and placing Poland among the lowest science funders in the European Union. And most of



Reform movement. Maciej Żylicz lobbied for changes in Poland's science-funding system.

what little money is available goes to research institutes and universities as block grants following an evaluation procedure that fails to adequately reflect differences in performance, says Żylicz. In 2008, less than 12% of the 4101 million zloty (about \$1400 million) Poland spent on research was available to researchers submitting proposals outside of predetermined national research priorities, which is far from sufficient, adds Żylicz.

The *Budujemy na wiedzy* (Building Upon Knowledge) reform package aims to change that. It pledges to distribute by 2015 about half of the national research budget to individual scientists via competitive awards made by NCN and the National Centre for Research and Development (NCBiR), a funding agency set up in 2007 to handle applied research proposals responding to national strategic priorities. Another significant change is the plan to regularly submit government-funded research institutions to a more efficient, independent, peer-review evaluation with an aim to promote the best. The reforms put underperforming institutions under "real threat ... to be closed down," Żylicz says. They will receive funding for another 6 months and then "get a limited time to restructure," adds Poland's undersecretary of state, Jerzy Szwed, who has overseen the reform bills.

For now, this threat applies mainly to Poland's 200 or so state-owned R&D units,

most tracing back to the communist era, although the 70 or so generally well-regarded PAN research institutes will also be evaluated. As part of an even more controversial higher education bill currently under debate, underperforming universities would probably have funding withdrawn too, Żylicz says. Poland would also label the best-performing university departments, as selected by international experts, as centers of excellence. These National Leading Scientific Centers would for 5 years receive more than 10 million zloty (about \$3.5 million) annually for research, faculty's salaries, and Ph.D. scholarships.

Many in the Polish scientific community are concerned with how the reforms will be implemented. "Some careful attention must be paid to research which has a long-term nature and cannot be carried out without stable financing extending over many years," Kleiber says. "It is important that the evaluation teams consist of independent, well-skilled, and objective experts," adds Adam Hamrol, rector of Poznan University of Technology and vice-president of the Conference of Rectors of Academic Schools in Poland.

A big part of getting the scientific community to welcome deep reforms was the Polish government's commitment in 2008 to increase science funding. The global financial crisis has slightly eroded this promise, however. Starting with 5202 million zloty (about \$1800 million) this year, the government has pledged to increase funding for research by 13% every year through 2013, extra money that may now go to both NCN and NCBiR. Many scientists still find this too good to be true. It wouldn't be the first time the government promised new funds for science and "nothing happened," Srebrny says. University of Warsaw plant biologist Stanisław Karpiński, a recently returned Polish scientist, adds that an insufficient increase in the science budget could delay and dilute necessary changes in the Polish science system.

Many, including Żylicz and Kleiber, advocate implementing the reforms step by step. "There is a general fear of change," Hamrol notes. But hopes, too, are running high. "We are sure that changes, if well introduced and accepted, will bring tremendous contribution to the further development of Polish science," says Hamrol.

—ELISABETH PAIN

Elisabeth Pain also profiles Polish scientist Agnieszka Chacinska at ScienceCareers.org, for which she is a contributing editor.

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