



PROFILE: HELGA NOWOTNY

Keeping Europe's Basic Research Agency on Track

Helga Nowotny played a key role in the successful start of the European Research Council. As its president, the Austrian sociologist still has two major tasks ahead of her

VIENNA—There were a few times when Helga Nowotny considered throwing in the towel and abandoning the fledgling European Research Council (ERC) she'd helped create. The thought would typically arise when she couldn't bear the weight of the Brussels bureaucracy anymore.

In 2007, for example, the ERC's scientific council, of which she was then vice-chair, wanted to fly several hundred young applicants for the first round of grants to Brussels for interviews. Weeks before the invitations were to go out, the European Commission's (EC's) legal service said no: E.U. rules did not allow payment of E.U. travel money to grant applicants. "We never saw these lawyers," Nowotny says. "We called them the secret legal service. It was maddening."

The lawyers eventually caved in—but not until Nowotny and her fellow council members arranged a meeting with EC President José Manuel Barroso. The incident was just one of many frustrating episodes. Throughout the birth and the 4-year existence of the ERC, scientists' ideas on how to run a funding agency for creative frontier science have clashed with the EC's rules for managing an international bureaucracy. For the scientific council—a group of 22 heavyweights

from across Europe, which Nowotny now chairs—it has been a steep learning curve and a source of deep frustration. "We were naïve," Nowotny says. "We got caught in this web of rules."

Nowotny, a petite, 73-year-old sociologist of science with the energy of someone half her age, hung in there, and in most cases, eventually got her way. The ERC, which has disbursed almost €3 billion since 2007, has become popular with scientists and is considered a success story in European research policy.

But Nowotny—who works at an office close to the University of Vienna and Sigmund Freud's old apartment—still has two major tasks to accomplish before she steps down in 2013, at the end of the ERC's first 7-year mandate. One is an overhaul of the organizational structure that she hopes will put it on more solid ground and wrest power away from the officials and politicians of the EC. The other is a substantial hike in the ERC budget for the period from 2014 to 2020. Her opening gambit: a more than 200% increase from the current level.

Those are tall orders, but insiders say few are better placed to accomplish them than Nowotny. "She's extremely capable and she

has an excellent political sense," says Dutch physicist and E.U. science policy expert Peter Tindemans. "She's very well networked and very effective. At meetings, she's always going from person to person, talking, talking, talking," says Frank Gannon, a veteran of European science administration who now heads the Queensland Institute of Medical Research in Brisbane, Australia. Nowotny is "strong and powerful," he adds.

Midwife

Helga Nowotny was born and raised here, except for a high school year spent in Wisconsin, where she fell in love with 1950s American youth culture and learned to play the saxophone. Back in Vienna, she studied law, found a job at a criminology institute, and obtained her law degree in 1959. Then her husband's career took her to New York, where she studied sociology at Columbia University. Giants of the field like Paul Lazarsfeld—an Austrian Jew who had left Vienna in the 1930s—and Robert Merton were her teachers.

After getting her Ph.D. in 1969, she specialized in the sociology of science, a field also known as science and technology studies, or STS. She has co-authored more than a dozen books but is best known for her contribution to *The New Production of Knowledge*, a 1994 book written with British science policy analyst Michael Gibbons and others. Its thesis was that traditional science was being replaced by what the authors called Mode 2: research driven by applications and societal questions, less organized by discipline and hierarchy, but based on collaborations in flexible teams.

◀ **On the move.** Nowotny has a busy travel schedule, but her office is in Vienna, where she was born.

The book was controversial; critics said Mode 2 had always existed, or that it wasn't clear whether it was an empirical description of reality or rather a model to follow. But the book cemented Nowotny's reputation as the "grand lady of STS," says sociologist Pieter Leroy of Radboud University Nijmegen in the Netherlands—even though her sharp pen has made her a few enemies as well.

After she retired as a professor at the Swiss Federal Institute of Technology in Zurich in 2002, Nowotny became one of the ERC's midwives. She was on the 2003 blue-ribbon panel that first concluded that Europe needed an agency for fundamental, curiosity-driven, bottom-up research. Until then, the E.U.'s Framework Programme (FP) primarily funded large collaborations, centering on applications and requiring groups from many E.U. countries. The ERC would be different because it would fund individual scientists and its sole criterion would be excellence.

Between 2001 and 2006, Nowotny chaired the 45-member European Research Advisory Board (EURAB), which issued several ringing endorsements of the idea. She kept on board EURAB's industry representatives, who were lukewarm, and helped to win over Philippe Busquin, then Europe's commissioner for research. "She speaks everybody's language," says French astronomer and former EURAB member Catherine Cesarsky. In 2005, Nowotny joined the embryonic ERC's scientific council as vice-chair; she took over as chair last year, when Imperial College London molecular biologist Fotis Kafatos stepped down. "She seems to be having her third youth," says Leroy.

Nowotny helped convince the council that the ERC should cover not just life sciences and physics but also the social sciences and humanities—an unusual concept in the Anglo-Saxon world. "We fund research in the 19th century, German conception of *Wissenschaft*, which includes everything," she says. She had proposed that 18% of the budget be spent on social sciences and humanities; the council rounded it down to 15%.

Her passion for the ERC stems in part from her feeling as a true European. She has lived and worked as a scientist in Hungary, Germany, France, the United Kingdom, and Switzerland. She moved back to Vienna in 2004—this time, for good, she says. She's still ambivalent about her hometown, how-

ever; she loves Vienna's quality of life and the arts scene but abhors its provincial, xenophobic streak.

A frenetic traveler, Nowotny says she often makes multipurpose trips, such as last month, when an old friend retired at The Hebrew University of Jerusalem. The university offered to organize an "ERC day," during which grantees presented their work and the Weizmann Institute of Science organized a dinner for her. She flies to Brussels once or twice a month, because despite the ERC's initial success, Nowotny isn't finished.

Tripling the budget

Overhauling the ERC's awkward organizational structure is important because it hampers the mission, Nowotny says. The ban on inviting applicants was just one example. EC rules demanded that grant reviewers, some of them world-famous scientists, fax in a copy of their passports to prove their identity. The scientific council wanted to give grantees credit cards for expenses; EC lawyers said it couldn't be done. The basic problem, according to a 2009 panel: The scientific council sets the policy but is dependent on the EC to get it executed (*Science*, 31 July 2009, p. 523).

The situation has definitely improved, Nowotny says. Since last year, day-to-day management rests with a so-called Executive Agency, a structure in Brussels that operates at arm's length from the EC and is more flexible. Nowotny praises its "highly professional" staff members and says working relationships are much better now. But a world-class funding agency can't be dependent on the goodwill of civil servants, she adds.

That's why, at Nowotny's request, Máire Geoghegan-Quinn, the current research commissioner, has set up a task force to devise a new structure within the E.U.'s tight constraints. Reforming the Executive Agency is one option, but lawyers are also studying a

paragraph added to the E.U. Treaty last year stipulating that the union "shall establish the measures necessary for the implementation of the European research area." It might allow abandoning the agency and starting something entirely new. The task force is chaired by Robert-Jan Smits, the EC's director general for research, whom Nowotny finds easy to work with and understanding of the ERC's needs.

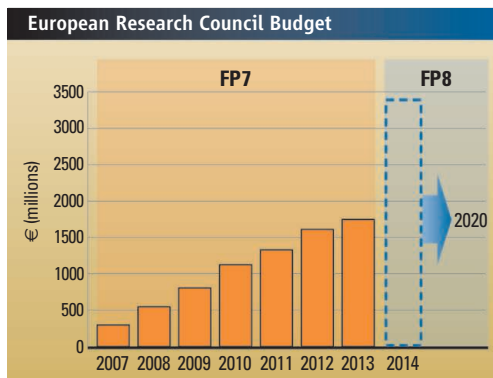
Her other big job is securing a permanent budget hike. The ERC was allotted just €7.5 billion out of the €51 billion total for FP7, which spans 2007–13. The amount actually spent is ramping up as the years go by and will reach €1.7 billion by 2013. Nowotny wants at least double that—€3.4 billion per year—from 2014 on. That would be €24 billion over the entire 7-year period of FP8, a tripling of the budget. Nowotny knows that's a lot to ask for from the EC, but she was delighted when Geoghegan-Quinn called herself "probably the ERC's greatest fan" in a recent interview with *Science* (18 February, p. 844).

Still, given the economic downturn and the fiscal crises in several European countries, Gannon says he believes that such a drastic increase is unlikely to happen. He cautions that countries that fare less well in the ERC's competitions—which are mostly in eastern and southern Europe—may start wavering in their support. To keep them involved, he has suggested that the ERC create a special competition, still using excellence as a criterion but aimed at countries that spend less on science.

That's anathema to Nowotny. Other parts of the Framework Programme address the needs of lagging countries, she says; besides, the ERC is a stimulus for countries to reform their universities and make them more competitive. "Behind closed doors, politicians and scientists in those countries tell me: Don't change the system," she says.

For similar reasons, she's adamantly against affirmative action for women, despite their embarrassing lack of success at the ERC. Of the latest round of Advanced Grants, for established scientists, 9.4% went to women—down from 15% in 2009. An ERC "gender equality plan," published earlier this month, promises some mitigating steps, such as encouraging women to apply for grants and ensuring that review panels are balanced.

But what Nowotny won't do—as much as the skewed sex ratio pains her—is lower the bar for women. "It would go against the ERC's core principles," she says. "We can't do it." And given her strength and power, that's likely to be the last word. —MARTIN ENSERINK



Poised for a boost? Nowotny hopes that after Framework Programme 7 ends in 2013, the ERC budget will double to at least €3.4 billion per year.