

The Winter of Discontent

Demoralized, destitute, and now defiant, French researchers are forcing a showdown with the government over poor funding and scarce opportunities for young scientists

PARIS—When it opened in 2000, the Rhône-Alpes Genopole was supposed to ride a biotech wave generated by the sequencing of the human genome. Instead, the center has been pummeled by a series of tsunamis that no one in the French research community, it appears, saw coming. The first shuddering blow came in 2001, when the Genopole—one of seven national genome institutes—received only 35% of its planned budget. The next year, one payment delay after another further eroded the institute's financial foundations.

The consequences have been severe. A protein-analysis lab meant to be completed 2 years ago lacks key equipment and sits largely idle, says center director Jacques Samarut, who has been unable to hire a full complement of staff. The shortfalls of machinery and personnel have forced the genome center to turn down lucrative research orders from industry. "We have absolutely no long-term view, because we have no idea if or when money will arrive," says Samarut, a molecular biologist. Things are so dispiriting, he says, that he's ready to quit.

Samarut is not the only top French scientist up in arms. Claiming that the government has paid short shrift to a barrage of complaints from an increasingly agitated scientific community, hundreds of lab directors, including more than half the chiefs at France's main biomedical research agency, INSERM, have threatened to stop doing administrative duties en masse on 9 March if the government doesn't fork over nearly €200 million posthaste from the 2002 budget that is owed to INSERM and CNRS, France's basic research agency. They've also demanded that the government reinstate 550 permanent research jobs abolished in favor of short-term contract positions and have called on the government to stage a conference to map out

the future of French research (*Science*, 6 February, p. 740). An Internet petition from the protesters has accumulated more than 42,000 signatures since its launch on 7 January (see Letters, p. 954).

"Their anger is justified," says endocrinologist Étienne-Émile Baulieu, president of the French Academy of Sciences. "The scientific community is thoroughly discour-



The budget blues. Thousands of scientists rallied on the streets of Paris last month behind a banner reading "save research."

aged and has no confidence in what the government says," he adds, noting that he's not speaking for the academy.

Battle cry

Frustrations have been building for more than a decade as a parade of science officials has left a trail of broken promises about boosting French research (see sidebar). "Public resources devoted to science have stagnated or fallen for years," says petition spokesperson Alain Trautmann, co-director of the cell biology department at the Cochin Institute. Research minister Claudie Haigneré was unavailable for comment, but a top official in her ministry acknowledged to *Science* that lab resources have not risen for 20 years.

Last month, CNRS director Bernard Larrourou attempted to dampen expectations by announcing that 2004 would be tough for the agency's 11,700 researchers. Just how tough, however, is a bone of con-

tention. CNRS says it is hiking its budget 6.5% this year, and INSERM is claiming a 7.5% increase. Overall, Haigneré has said, the civilian R&D budget is slated to receive 3.9% more in 2004. But those figures are misleading, assert France's powerful research unions. They claim that the stated increases for 2004 are not real. Moreover, they say, civilian R&D funding, adjusted for inflation, is down 20% since 1993, and that doesn't include €143 million shaved from the 2003 budget after its passage by Parliament.

Lab directors are certainly pleading poverty. Virologist Jean-Luc Darlix, head of the 62-strong INSERM human virology department at the École Normale Supérieure in Lyons, says he has no money to replace aging virus incubators and centrifuges and for nearly 3 months had been unable to order enzymes and other supplies. Budget cuts, he says, have forced his team to hold off on about a third of planned experiments on everything from HIV to lentiviral vectors. The center's P4 facility for handling the most dangerous human pathogens—the only public lab in Europe in which animal experiments with such agents are permitted—had to close in December when INSERM, citing budget shortfalls, laid off the lab's two dedicated engineers. The facility is due to reopen next month, but Darlix says that's up in the air as money has not been found yet to replace the essential staff. He says he's furious that important experiments in the P4 lab on the Ebola and Marburg viruses are now in limbo.

Even priorities of President Jacques Chirac's administration, such as cancer research, are suffering. Jean-Pierre Kolb, a group leader at an INSERM leukemia research lab based at the University of Paris Jussieu campus, says his core funding from INSERM is being cut by a whopping 84%.

Researchers are also incensed over a shortage of positions for young scientists. INSERM has stated that it will hire a trifling 30 scientists under the age of 35 this year, compared to 95 in 2002 and 69 in 2003. Physicist Georges Debrégeas, head of a fluids research lab at the Collège de France in Paris, says that in the past few years five of his freshly minted Ph.D.s have left France for greener pastures. "The chances that they will return are almost nil," he says.

One such émigré is Franck Polleux. After a postdoc stint at Johns Hopkins University in

Baltimore, Maryland, and 2 years at an INSERM unit in France, the 34-year-old neuroscientist was offered a start-up package 15 months ago by the University of North Carolina, Chapel Hill, and has since raised enough funds to keep his six-member team's research on neuronal connections going for another 5 years. Polleux says he misses his family and friends in France but has no regrets about leaving the onerous hierarchy and chronic funding shortages of his home country.

At the heart of the row is a long-running debate over the civil service status of researchers. Successive governments have striven to replace permanent posts with renewable contracts, a trend that scientists have fought hard on the grounds that temporary jobs are not conducive to basic research. Coming to grips with this issue should not be "taboo," says Axel Kahn, director of the Cochin Institute and a high-profile petition signatory. He and many colleagues, he says, accept that there should be more flexibility in the civil service system.

Salaries are another thorny issue: Young scientists typically take home €2000 per month. Kahn worries that researchers could end up with the worst of both worlds—no job security and lousy pay.

No meeting of the minds?

Early last month, Haigneré dismissed the researchers' petition as out of line, pointing out that President Chirac had promised a new law for the scientific community by the end of 2004. But as the revolt has spread, Haigneré has adopted a more conciliatory tone, insisting that she understands scientists' concerns and denying that the government has turned its back on basic research. Indeed, argues the ministry official, the current crisis may be a good thing: "We will finally make progress" on improving the way French science works, he says.

Haigneré has also ordered a 2-week audit of the civilian R&D budget, due to be pub-

New Faces, Old Promises

On 21 June 1994, in a rousing speech before the French National Assembly, then-research minister François Fillon urged deputies to commit to catching up with the United States and Japan in science spending by 2005 (*Science*, 24 June 1994, p. 1840). At that time, France's civilian R&D budget was about 2.4% of gross domestic product (GDP). Since then, spending has slid to 2.2% of GDP, while the U.S. and Japan hover at nearly 3%.

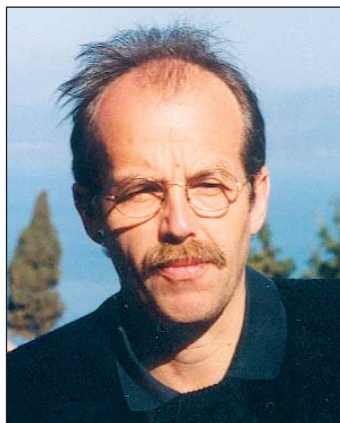


Victim of last uprising. Claude Allègre felt the ire of French researchers 4 years ago.

lished on 20 February, and has launched a 2-month Internet consultation on the future of French research. Prime Minister Jean-Pierre Raffarin earlier last month promised that there would be no spending freeze or cuts this year, and last week, the government acceded to the protesters' demand for a national conference on the future of French research.

After that, the Socialist government, not wanting to rock the boat any further, appointed career politician Roger-Gérard Schwartzberg as minister. At a time of stagnant research budgets, Schwartzberg did his best to mend fences—until, that is, the Socialists were defeated in the 2002 elections. Former astronaut Claudie Haigneré inherited a legacy of broken promises and now must deal with the biggest researcher protest in the nation's history. In an editorial late last month, the daily *Le Monde* accused the government of gambling "that the scientific community would tire itself out" and that French television "would devote only 1 minute of its news programs to the affair." As *Le Monde* concluded: "Gamble lost."

—MICHAEL BALTER



Coming around. Research minister Claudie Haigneré (left) at first underestimated the ferocity and resolve of the protest spearheaded in part by Alain Trautmann; 42,000 researchers have now signed a petition.

doesn't manage much." It also recommends that CNRS scrap "marginal" disciplines such as economics and political science. The audit is due to be published in the spring after CNRS has had a chance to respond.

The leak has infuriated ringleaders of the insurrection. Trautmann condemns the *L'Express* report as "selected extracts taken out of context," even though he admits he has not seen the audit. "The report and the article verge on defamation," seethes microbiologist Patrick Monfort, research chief at a CNRS pathogens lab at Montpellier University. CNRS declined to comment.

It's unclear whether Haigneré intends to use the audit to help stave off calls for an immediate infusion of extra cash into a research system crying out for reform. The protesters, however, say they intend to keep up the pressure until the government capitulates. Otherwise, several told *Science* that they are deadly serious about following through on their threats and plunging French science into an abyss. "We don't have much to lose," says Samarut.

—BARBARA CASASSUS

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