

Italy moves towards a 'scientific parliament'

In line with the current European trend of reorganizing national science and technology research direction and funding as a route to improving economic growth, the Italian government has passed a decree to shake up the country's research strategy. And for the first time, Italy will develop a National Science Policy.

Beginning in January 1999, the country's research efforts will no longer be determined by the National Research Council (CNR)—until now, Italy's primary public research grant agency—but by the government and government-appointed panels of experts. This reorganization follows a successful change in the university grant-giving system last year, which replaced 14 grant giving committees by a board of five specialists and which also saw funds taken away from the CNR (*Nature* 392; 531, 1998).

Biomedical research is expected to receive a minimum budgetary increase of 30 percent (IL 150 billion; US\$ 83 million) over the next three years and undersecretary of state for research, Giuseppe Tognon, revealed that "areas of primary national interest in biomedicine will be neuroscience, vaccines, gene therapy, aging and nutrition research." Program details for the next three years will be published in spring 1999.

The new 'scientific parliament' system will focus on integrating academic with industrial research, a move promised by research minister, Luigi Berlinguer, two years ago (*Nature Med.* 2; 734, 1996). The same approach was adopted as policy by the British government through its Foresight program five years ago and is currently being attempted in France (*Nature*, 393; 203, 1998).

Funding will be distributed directly by a committee of cabinet ministers based on the suggestions of a panel of senior directors from research institutes, universities and industry. Priority will be given to projects with the highest potential for industrial transfer as determined by a third multidisciplinary committee. Panel members for each of the three groups will be nominated by the prime minister this autumn and are expected to include experts from foreign countries.

Many scientists welcome the decision to transfer the power for planning research from the CNR to the government because of CNR's reputation for 'favoring friendships over scientific excellence.'

But Giorgio Bernardi, head of CNR's biomedicine committee, claims that the new system will be subject to the same bias. "Who can guarantee that the government will appoint its advisory experts according to scientific merit rather than political merit?" asks Bernardi, "I firmly believe that the new system won't wipe out this risk."

Bernardi also fears for what will become of the CNR, an establishment that has considerable experience: "I agree that the CNR's power has to be redistributed, but the risk is that in the future the CNR will be completely ignored." In fact, the task of the CNR will be to 'scout out' novel areas of research and pass this information on to the new advisory committees. Bernardi's own biomedicine committee will be dissolved on January 1st.

Other biomedical scientists are also less than optimistic about the changes. Silvio Garattini, director of the Mario Negri Institute in Milan, thinks that problems will arise because "three new committees is too many to be efficient." And he feels that a yearly 10 percent increase in funds is too small to promote significant breakthroughs. "The least I expected was a doubling of the budget in light of the fact that Italy dedicates only 1.2 percent of its gross national product

to research," complains Garattini.

Claudio Cavazza, president of the research products manufacturer Sigma Tau and the biotechnology company, IRBM (Institute for Research in Molecular Biology)—one of only ten in the country at the present time—criticizes the government for not implementing practical methods of encouraging greater industrial involvement in academic research. "The lack of measures to facilitate venture capital investment, and tax relief on investment will hinder progress substantially," says Cavazza. Furthermore, no steps have been made to facilitate the cross-training and work exchange between academia and industrial laboratories. And, unlike other European countries, Italy still does not permit publicly funded researchers to hold shares or sit on the boards of companies with which they have research links.

But some scientists are pleased with the new policy. Jacopo Meldolesi, director of the DIBIT institute in Milan, and the biomedical specialist appointed to the new university grants board, insists that the government's new-found recognition of the importance of scientific entrepreneurialism is the key to the new system. "For the first time, since my return from the United States, I'm optimistic about the progress of Italian biomedical research," says Meldolesi.

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EGT—the new research spending policy

According to Terence Kealey, an expert on the economics of science and a lecturer in clinical biochemistry at Cambridge University, UK, the policy for increasing academic and industrial collaboration to improve research and stimulate economic growth, is being adopted worldwide. "The trend has been triggered by the realization that the model people have used since the Second World War, whereby government funds pure science and advances in pure science trickle through to industry which exploit them, is false," Kealey told *Nature Medicine*.

"What we are seeing is the application of a new theory of government funding of science—called 'Endogenous Growth Theory' (EGT)—which is replacing the old 'linear' model," explains Kealey. EGT asserts that the amount of money that the private sector puts into research is less than society needs. This deficit justifies the government funding of industrial science and directly points ministers to supporting industrial research. Since they are already highly committed to funding university research they forge links and end up supporting both academia and industry.

According to Kealey, the huge increases in science funding seen in the US and Japan are powered by a perception that EGT will work. The UK's Chancellor of the Exchequer, Gordon Brown, has also stated that his economic growth policies are to be based on "neo-classical endogenous growth theories."

However, the problem is that scientists have never even heard of EGT, despite it being the new driving force for research funding and education generally. "For years governments listened to scientists and now that the old model has failed, this is a conversation taking place between government and economists," warns Kealey.

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