

Science in São Paulo, Brazil

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Science and technology have been instruments for development in Brazil for some time. Besides contributing to the pool of human knowledge through scientific articles, books, thesis and conference communications, Brazil has used knowledge to build the most efficient agricultural system in the world and the only industrialized economy that has 47% of its energy generated from renewable sources. Brazilian companies use knowledge to build a strong IT sector, to create self-sufficiency in oil production and one of the main aircraft industries in the world. Universities and research institutes in the country generate 2% of the world's scientific production and form more than 10 thousand PhDs every year.

Research in Brazil, as in many countries, is supported by industry and the government. Federal agencies as the National Research Council (CNPq), the Foundation for the Improvement of Higher Education Personnel (CAPES) and the Funder of Studies and Projects (FINEP) support thousands of research projects throughout the country. Many states have state foundations to provide additional support for research.

Recognizing the importance of science and technology for social and economic development, the State of São Paulo strongly supports research, public research universities, technology higher education and research institutes. In São Paulo 64% of the research funding from public sources is provided by the state.

FAPESP is a public foundation, funded by the taxpayer in the State of São Paulo, with the mission to support research projects in higher education and research institutions, in all fields of knowledge. São Paulo has a population of forty million and generates 35% of Bra-



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zil's GDP. The constitution of the State establishes that 1% of all state taxes belong to the foundation and the government transfers these funds monthly. The stability of the funding and the autonomy of the foundation allow for an efficient management of the resources that has had a sizable impact: while São Paulo has 22% of the Brazilian population and 30% of the scientists with a doctorate in the country, the state is responsible for 52% of the country's scientific articles published in international journals.

FAPESP expects to invest approximately US\$ 360 million in research projects in 2009. One third of this value goes into fellowships for graduate and undergraduate students. About 55% goes into exploratory academic research, mostly fundamental in nature. The remaining 10% is invested in application oriented research, in many cases performed in Small Businesses or in joint research performed by academia and industry.

The foundation works in close contact with the scientific community: all proposals are peer reviewed with the help of area panels composed of active researchers. Scientists in São Paulo often bring proposals for programs to the foundation, and these are carefully analyzed and, if deemed strong in academic terms, are shaped by the

foundation into research programs that might congregate a set of research projects. Since the mandate of the foundation is to foster research and the scientific and technological development in the State, ideas for programs that match world class research with contributions that will impact social problems are welcome. A special program on Genomics has brought important scientific and technological results, generating a paper highlighted on the cover of the science magazine *Nature* and the first two Brazilian small businesses in the field. In 2008 the foundation announced broad research initiatives on Bioenergy and on Global Climate Change. The foundation supports large research programs in Information Technology and in Biodiversity. Results from BIOTA, one of the largest biodiversity research programs in the world, besides being published in relevant scientific journals, have been used by the state government to create conservation oriented legislation.

This special number of *Pesquisa FAPESP* (*FAPESP Research*) displays some of the science supported by FAPESP in different fields of knowledge. FAPESP Research has been published since 1997, creating a channel to communicate with the general public about the science supported by the foundation.