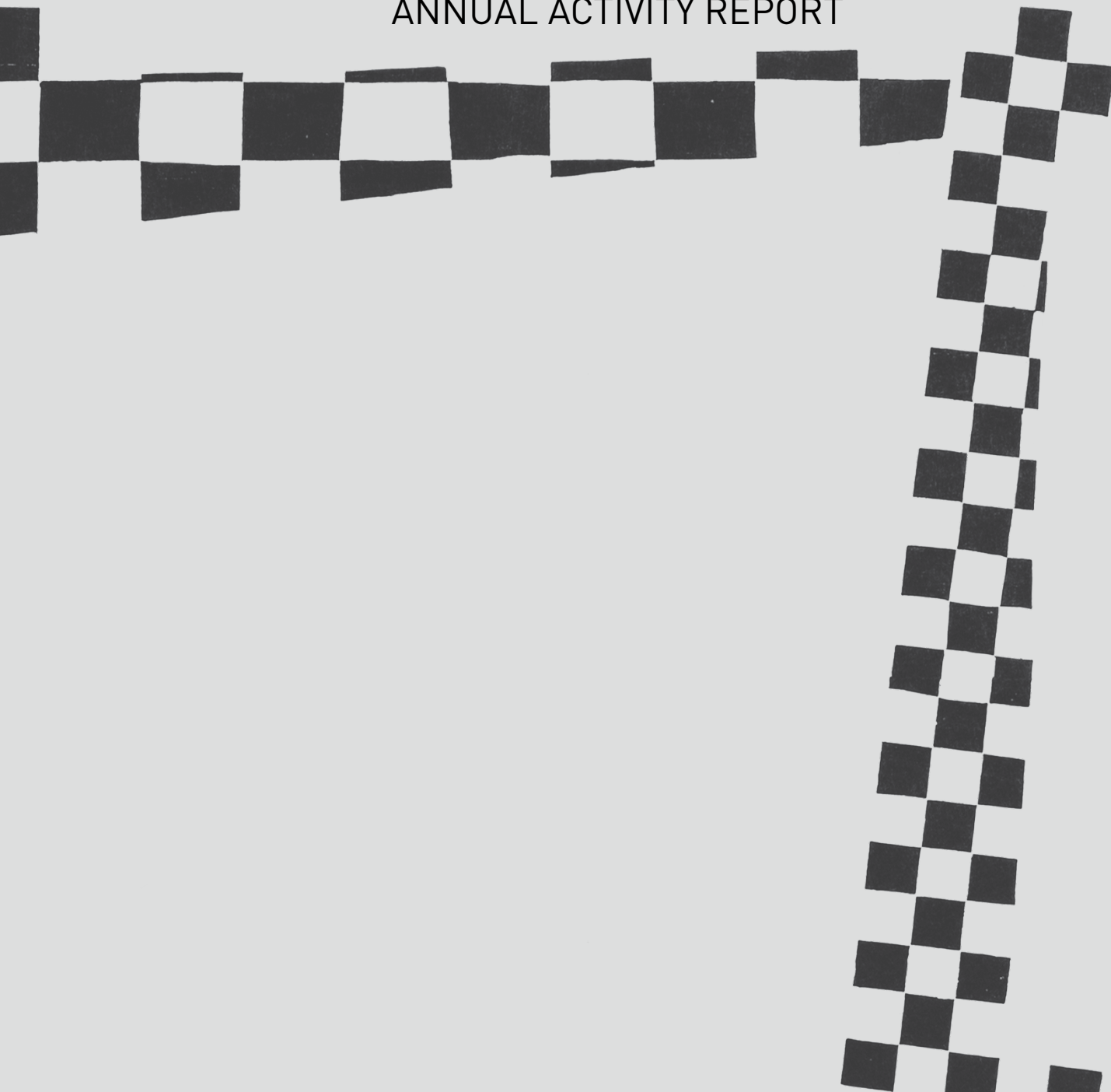




SÃO PAULO RESEARCH  
FOUNDATION

# FAPESP 2014 ANNUAL ACTIVITY REPORT







SÃO PAULO RESEARCH  
FOUNDATION

FAPESP 2014 ANNUAL ACTIVITY REPORT

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FISCAL YEAR 2014

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Nelson Baeta Neves Filho (beginning April 3, 2014)

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FISCAL YEAR 2015

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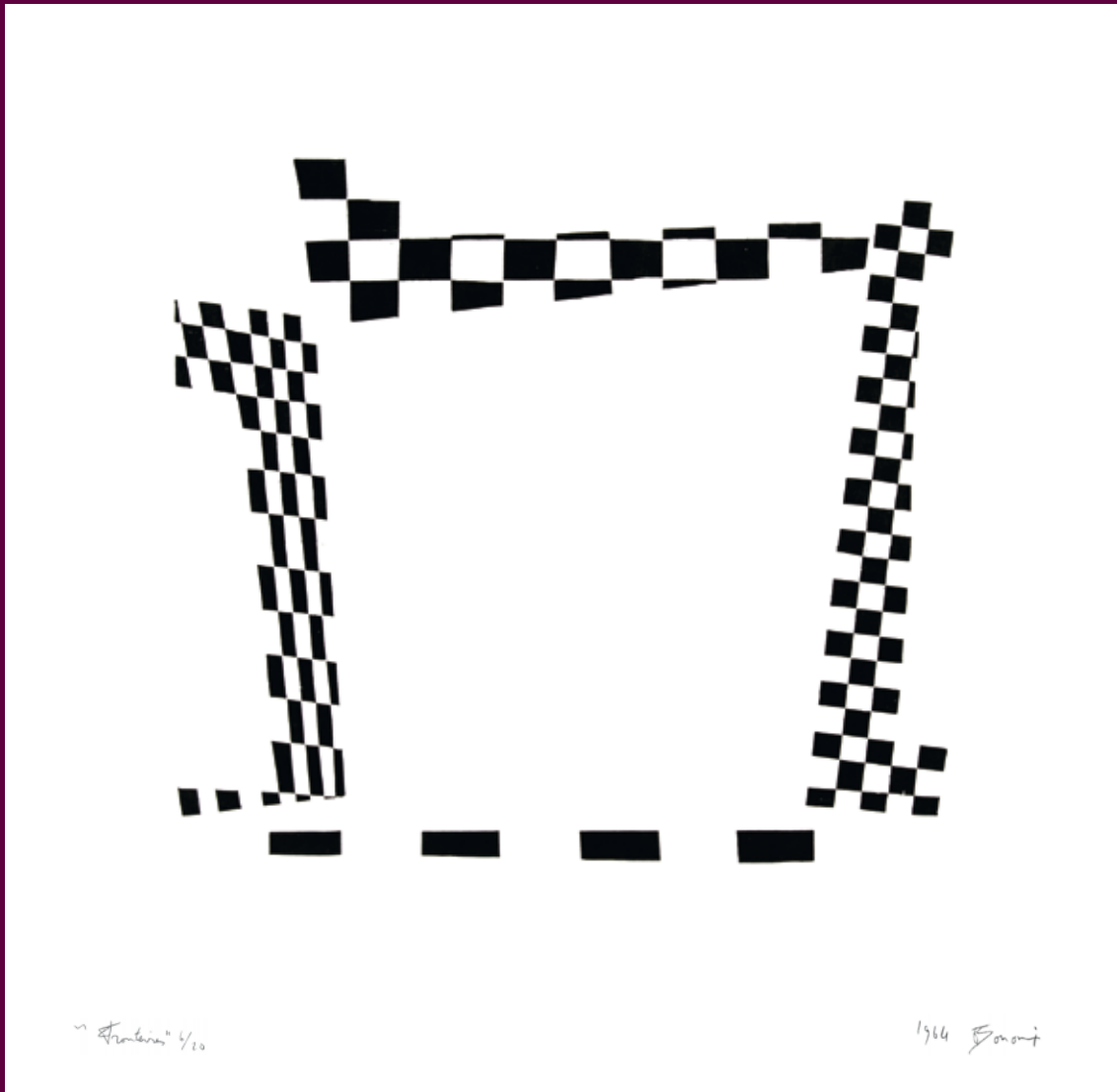
José Arana Varela (mandate ended on February 13, 2015)

SCIENTIFIC DIRECTOR

Carlos Henrique de Brito Cruz

ADMINISTRATIVE DIRECTOR

Joaquim José de Camargo Engler



*Fronteiras, 1964*

Woodcut  
83.5 x 88.5 cm

"Concrete" geometry as the  
limits of freedom (conversations  
with Waldemar Cordeiro)





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## INTRODUCTION

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In 2014, FAPESP's income totaled \$ 413.57 in purchasing power parity (PPP), which was a 5% increase from 2013 at current prices. Transfers from the São Paulo State Treasury accounted for 81.70% of the total. Other sources (agreements with other funding agencies, companies, and higher education and research institutions in Brazil and abroad) accounted for 12.19%, while the Foundation's own financial revenue accounted for 6.11% (by statutory requirement, FAPESP must hold interest-bearing assets for investment of the income from the funding of research to supplement the transfers received from the State Treasury). Thus, despite the economic slowdown and the resulting decrease in the state's tax revenue in 2014, FAPESP was able to fulfill its commitments and carry out its mission of supporting the development of research for the benefit of society.

FAPESP disbursed \$ PPP 390.08 million in research funding in 2014. The foundation supports research in all knowledge areas.

As usual, health sciences research received the highest proportion of total funding in 2014 (28.56%) due to the large number of researchers dedicated to this knowledge area in the state of São Paulo and the demand for health project funding. Next came biological sciences (15.87%), followed by humanities and social sciences (10.44%), engineering (10.27%), and agronomy and veterinary sciences (8.21%), among others. Thus, just over half of the total amount disbursed by FAPESP in 2014 went to research in life sciences – health, biological, and agronomy and veterinary sciences.

The area that expanded the most was astronomy and space science, which received 290% more funding in 2014 than in the previous year, primarily because FAPESP joined the international consortium responsible for the Giant Magellan Telescope (GMT). Construction of the GMT observatory in the Chilean Andes is scheduled to begin in 2015. This mega-telescope, which should be fully operational in 2021, will have 30 times the resolving power of current telescopes, meaning that the amount of data it will make available will be that much greater. The GMT will enable astronomers to investigate the formation

*Para Cecília Meirelles:  
Transfiguração da Pomba  
na Broadway, 1970  
Woodcut  
110 x 102 cm*

Tribute to "Dove on Broadway",  
a poem by one of Brazil's  
foremost writers

of stars and galaxies shortly after the Big Bang, measure the mass of black holes and map their immediate vicinity. FAPESP will invest US\$ 40 million, or approximately 4% of the project's total estimated cost, thus guaranteeing 4% of the GMT's operating time for researchers from São Paulo as well as a seat on the consortium's board, which will also create opportunities for companies in São Paulo to supply services, components and assemblies for the consortium.

The breakdown of the disbursements by institution shows that, as usual, the largest proportion (47.55%) went to researchers affiliated with the University of São Paulo (USP), followed by the University of Campinas (Unicamp, 14.29%) and São Paulo State University (UNESP, 12.14%). Federal universities in São Paulo State tied with UNESP (12.14%).

FAPESP's research funding aims to achieve three objectives, taking into account the considerable time required for scientific work and training: advancement of knowledge, the development of application-driven research, and support for research infrastructure. Funding for the first of these objectives involves scholarships and regular grants for education and training, including thematic projects and programs such as the Young Investigator Award. For the second objective, FAPESP funds research with clear potential applications in socially and economically important areas through programs such as Innovative Research in Small Business (known by the Portuguese acronym PIPE), Public Policy Research and Public Policies Research for the National Health Care System, joint research with private enterprises and universities to produce knowledge of relevance to industry through Research Partnership for Technological Innovation (PITE) and other programs, and academic research in health, agronomy, veterinary sciences and engineering. For the third objective, FAPESP provides funding for the infrastructure required by researchers, including refurbishment and modernization of laboratories, updating of libraries and archives, and assuring fast internet access.

The breakdown of the disbursements in 2014 in terms of these three objectives shows 51.77% of the total going to support application-driven research, 40.82% to advancement of knowledge, and 7.40% to research infrastructure.

FAPESP classifies its research funding programs into three main groups or lines: regular programs, special programs, and technological innovation programs.

Regular programs accept proposals submitted spontaneously by researchers; special programs aim to promote research in vital areas and bridge gaps in São Paulo State's science and technology system; technological innovation programs support projects with the potential to develop new technology or contribute to public policymaking.

The breakdown of the disbursements in 2014 in terms of these three funding lines shows regular programs accounting for 78.61% of the total, special programs for 11.19%, and technological innovation programs for 10.20%. The latter includes three significant interdisciplinary programs: BIOEN (Bioenergy), BIOTA (Biodiversity), and RPGCC (Global Climate Change).

In 2014, FAPESP approved 11,609 new research projects and maintained 11,197 existing scholarships. It received 11,834 applications. Scientific initiation accounted for the largest proportion of both applications and scholarships extended, followed by PhD, master and postdocs.

As one of the results of FAPESP's internationalization efforts, the proportion of postdoc scholarships extended to researchers from other countries has increased significantly. Foreigners accounted for 17% of these scholarships in 2014, led by researchers in humanities, physical sciences and mathematics, earth sciences and biological sciences. This outcome is highly positive, as the presence of researchers of other nationalities in São Paulo necessarily fuels international collaboration in research and publications, thus raising the visibility and impact of the science conducted in the state.

The number of new research internships abroad funded in 2014 totaled 984, providing young graduate and postdoc students with scholarships from FAPESP the opportunity to train in leading research centers around the world. The United States, France, the United Kingdom, Spain, and Canada were the most frequent destinations for these trainees.

Another outcome of the internationalization effort in 2014 was the signing of 38 new cooperation agreements with foreign research funding agencies and higher education and research institutions, which takes the total number of ongoing international agreements to 125. During the year, FAPESP welcomed



scientific delegations from several countries, including Canada, Ethiopia, France, Germany, Iran, Japan, the Netherlands, Peru, Portugal, South Africa, Thailand, the United Kingdom, and the United States. Many came to discuss existing agreements, whereas others wanted to explore the possibility of new agreements.

In 2014, FAPESP maintained the series of events called FAPESP Week and hosted these symposia in Beijing, Munich, Berkeley and Davis, as well as at a seminar in Washington to discuss collaborative research on the Amazon, which was organized in cooperation with the US Department of Energy.

FAPESP also welcomed researchers from other countries to international conferences, such as the second edition of the Brazilian Bioenergy Science & Technology Conference (BBEST). Held in October 2014, this event was the occasion for a Rapid Assessment Process to indicate options for the sustainable global expansion of bioenergy conducted under the auspices of the Scientific Committee on Problems of the Environment (SCOPE), an intergovernmental organization that works with the United Nations Educational, Scientific & Cultural Organization (UNESCO).

Other significant international events hosted by FAPESP in 2014 included a Microsoft eScience Workshop, which explored the increasingly frequent opportunities for interaction between researchers in all knowledge areas and data-driven science technology, the Workshop on the Impacts of Global Climate Change on Agriculture and Livestock, co-hosted by FAPESP's Bioenergy Research Program (BIOEN) and BE-Basic (Biotechnology-based Ecologically Balanced Sustainable Industrial Consortium), a research program funded by the Dutch government to develop biochemicals, biomaterials and biofuels.

Another example of the growing presence of FAPESP's researchers in important international scientific organizations was the election in December 2014 of Gilberto Câmara Neto to represent the Foundation on the interim steering committee of the Belmont Forum, which was established in 2009 as a collaboration between environmental change research funding agencies and science councils in 13 countries, as well as the European Commission. FAPESP and the Belmont Forum have issued several joint calls for proposals.

*Diretas já*, 1984  
Woodcut  
48.5 x 60.5 cm

Produced in 45 minutes  
to raise funds for campaign  
to reinstate democracy in  
Brazil, starting with direct  
elections for president

FAPESP has been in the news at home and abroad, with frequent reports on its local and international activities. In 2014, it featured in 9,166 stories in the press worldwide, all of them positive for its institutional image. One worth highlighting is an article in a special issue of *Nature* about South American science (June 12, 2014), in which Martyn Poliakoff, Vice President of the Royal Society in London, is quoted as saying “FAPESP is a very interesting model for us because São Paulo is one of the few states in the world where support for research is linked directly to GDP.”

Also reflecting our growing exposure to the public, FAPESP’s portal received 2.6 million visits during the year, while the websites of *Agência FAPESP*, the Foundation’s news agency, and *Pesquisa FAPESP*, its monthly magazine, received approximately 1 million hits. Some 13,500 people attended events organized by FAPESP in 2014. The Virtual Library, a comprehensive online database that provides information on all research projects funded by FAPESP, recorded approximately 4 million page views during the year.

Also in 2014, FAPESP commissioned a public perception survey from Datafolha to determine what the population of São Paulo State thinks about science and research. The results show that scientists are the third most admired profession (61%) after physicians (70%) and teachers (77%). Another noteworthy finding is that while 88% consider investment in science and technology (S&T) to be very important, 70% say that Brazil’s current levels of investment in S&T are insufficient and 86% think the government should fund scientific research even if it does not produce immediate benefits.

The general public was sampled in 138 towns and cities across the state, including 3,217 female and male interviewees aged 16 years and above from all income groups. In this group, 63% said they had some interest in S&T, and 26% were very interested. The proportion expressing strong interest in S&T (26%) was larger than in economics and business (24%), fashion (14%), politics (12%), or news about celebrities (7%). Ranking above S&T were medicine and health (51%), food and shopping (45%), environment and ecology (39%), religion (38%), sports (32%), and movies, arts and culture (30%).

Of those who frequently obtained information about S&T, just under one-third did so mainly from television (31%). Other sources included the



internet (24%), conversations with friends (21%), newspapers (18%), and magazines (10%).



This is the last FAPESP's activities annual report that I have the honor and pleasure of signing because my second term as a member of the board and hence as President ends in September. Therefore, I would like to highlight an aspect of those activities that received special priority in the eight years that I have led the Foundation.

Both my academic career and my experience in public service focused on international relations for long periods. Naturally enough, therefore, this topic figured among my prime concerns as President of FAPESP.

Science is an international activity and has been recognized as such since the Renaissance by the academies of sciences, which encouraged more comprehensive sharing of discoveries. Owing to the specific characteristics of today's world, however, science has an even more significant part to play on the global stage.

The speed with which the scientific culture of basic and applied research is broadening the horizons of knowledge and changing the lives of everyone on earth is one of the key dimensions of international relations in the twenty-first century.

The Royal Society, the national academy of science in the United Kingdom, published a report in 2010 exploring what it called new frontiers in science diplomacy and stressing the role of science, technology and innovation in three dimensions of foreign policy: informing foreign policy objectives with scientific advice – science in diplomacy; facilitating international science cooperation – diplomacy for science; and using science cooperation to improve international relations – science for diplomacy.

The challenges of the world order and the tensions fueled by climate change, insufficient energy resources, food insecurity, poverty, water shortages, Internet governance and so on are some of the issues that make the presence of science

in diplomatic action imperative. During my time as Brazil's foreign minister, I realized just how important a role science can play in informing foreign policy decisions, for example, in addressing the environmental agenda and disarmament negotiations.

At the same time, it is important to note that in a globalized world, research is no longer territorialized and that one of its dimensions is interaction and networking among researchers. Hence, the intensification of diplomacy for science and of international cooperation in this area: knowledge creation is not confined to a few centers, and science now operates in a more leveled world, which requires greater interconnection between researchers in all regions and disciplines.

Scientific cooperation also improves international relations because researchers share the values of scientific inquiry and of its methods, based on rationality, transparency and universality. They constitute an international community of their own, integrated and cross-border, disposed to cooperation, mutual understanding and the pursuit of solutions to social problems. In a fragmented world pervaded by tensions, they are a diplomatic asset with the potential to help make international relations more peaceful and less belligerent. They represent a process of solidarity building based on facts and results.

All this explains the internationalization effort to which I have devoted so much time and energy during my time as President of FAPESP. This effort has resulted in 135 ongoing cooperation agreements in May 2015 with universities, research funding agencies and companies. To date, these agreements have led to more than 800 research projects involving international collaboration, thus increasing the visibility and impact of the science conducted in São Paulo. Thirty-eight new international cooperation agreements were signed in 2014 alone.

The aim is to build the capabilities of São Paulo's researchers in all areas on a mutual interest basis, thereby strengthening the comparative advantage in knowledge value-added that makes our state unique in Brazil. The irradiating effect of this knowledge on national life enables us to help augment Brazil's capacity to tackle and overcome its challenges.



FAPESP's internationalization strategy is not confined to the awarding of grants for Brazilian researchers to work abroad (there were 1,265 such scholarships in force at the end of 2014). It also prioritizes attracting well-qualified foreign researchers to São Paulo.

This has been achieved by means of postdoctoral scholarships: 17% of all such scholarships granted in 2014 went to foreigners. In 2014, 237 researchers came to São Paulo from other countries to collaborate in the development or establishment of projects for institutions in our state.

FAPESP's São Paulo Schools of Advanced Science Program has brought several renowned scientists to the state, including a number of Nobel Prize winners, to deliver short courses for groups of young PhD students from Brazil and abroad. The São Paulo Excellence Chair Program (known by the Brazilian acronym SPEC) brings leading scientists to the state for longer periods of cooperation.

FAPESP Week is a series of three- or four-day events held in various parts of the world, starting in 2011 in Washington DC. At these symposia, researchers from São Paulo and colleagues from other countries exchange their latest findings in a range of knowledge areas.

The personal interaction facilitated by these events has resulted in dozens of new joint research projects. Several new cooperation agreements between FAPESP and other research funding agencies, universities or research institutions have also been signed thanks to the contacts made during previous editions of FAPESP Week. In 2014, they were held in Beijing, Munich and California (Berkeley and Davis). The venues in previous years included Washington, Salamanca, Madrid, Toronto, Cambridge (Massachusetts), Morgantown (West Virginia), Tokyo, London, and North Carolina (Charlotte, Chapel Hill, and Raleigh). In 2015, FAPESP Weeks have so far taken place in Buenos Aires and Barcelona, with others scheduled for Michigan and Ohio.

In addition to these symposia, directors of FAPESP and researchers funded by its programs regularly attend important scientific events abroad. In 2014, for example, FAPESP and the US Department of Energy co-hosted a seminar

to discuss collaborative research on the Amazon by researchers from São Paulo and the United States. Since 2013, FAPESP has been represented at the London editions of the Naturejobs Career Expo, the world's largest fair and conference exclusively for science career opportunities, with a special emphasis on attracting young researchers. Since 2014, it has also been present at the Boston edition of the fair.

In addition to fostering exchange and scientific debate at these international meetings, FAPESP has taken the exhibition *Brazilian Nature: Mystery & Destiny* to other countries. Using a unique approach to the dissemination of knowledge about Brazilian diversity, the exhibition showcases illustrations from the work of German botanist Carl Friedrich Philipp von Martius, who documented Brazilian flora in the early nineteenth century. In some cases, the illustrations are juxtaposed with recent photographs of the same places. The panels display images and information about Brazil's extraordinary biodiversity, to whose exploration and conservation scientific programs such as BIOTA-FAPESP contribute. The exhibition, which was originally an initiative of FAPESP with the Berlin Botanical Museum, has already made its way across Germany, with stops in Berlin, Bremen, Leipzig, Heidelberg, Eichstätt and Munich (at the renowned Deutsche Museum), as well as Erlangen, Martius's birthplace. It has also been included in every FAPESP Week.

Thanks to all of these international activities, FAPESP has seen its media exposure increase significantly in other countries, particularly in specialized science media but also in general-interest journalism. This increased exposure in turn is reflected by growing interest on the part of researchers around the world in the work of their São Paulo colleagues as well as increased visits to FAPESP's websites by users from abroad and rising numbers of subscribers to the foreign-language versions of its news products. In recent years, FAPESP and the research it supports have featured in influential media outlets around the world, such as the BBC, the *Financial Times*, *El País* and *The Economist*, as well as science journals.

In sum, FAPESP's internationalization efforts over the past eight years have produced significant results for science, higher education and research institutions and researchers in São Paulo, and indeed for FAPESP itself, thanks

to the exchange of people, ideas and knowledge it has fostered. I feel rewarded for having contributed to these efforts.



FAPESP's annual reports are always illustrated by selected reproductions of the work of leading artists from São Paulo State, in yet another demonstration of the Foundation's search throughout its 53-year history for ways to further the convergence of all major areas of human knowledge.

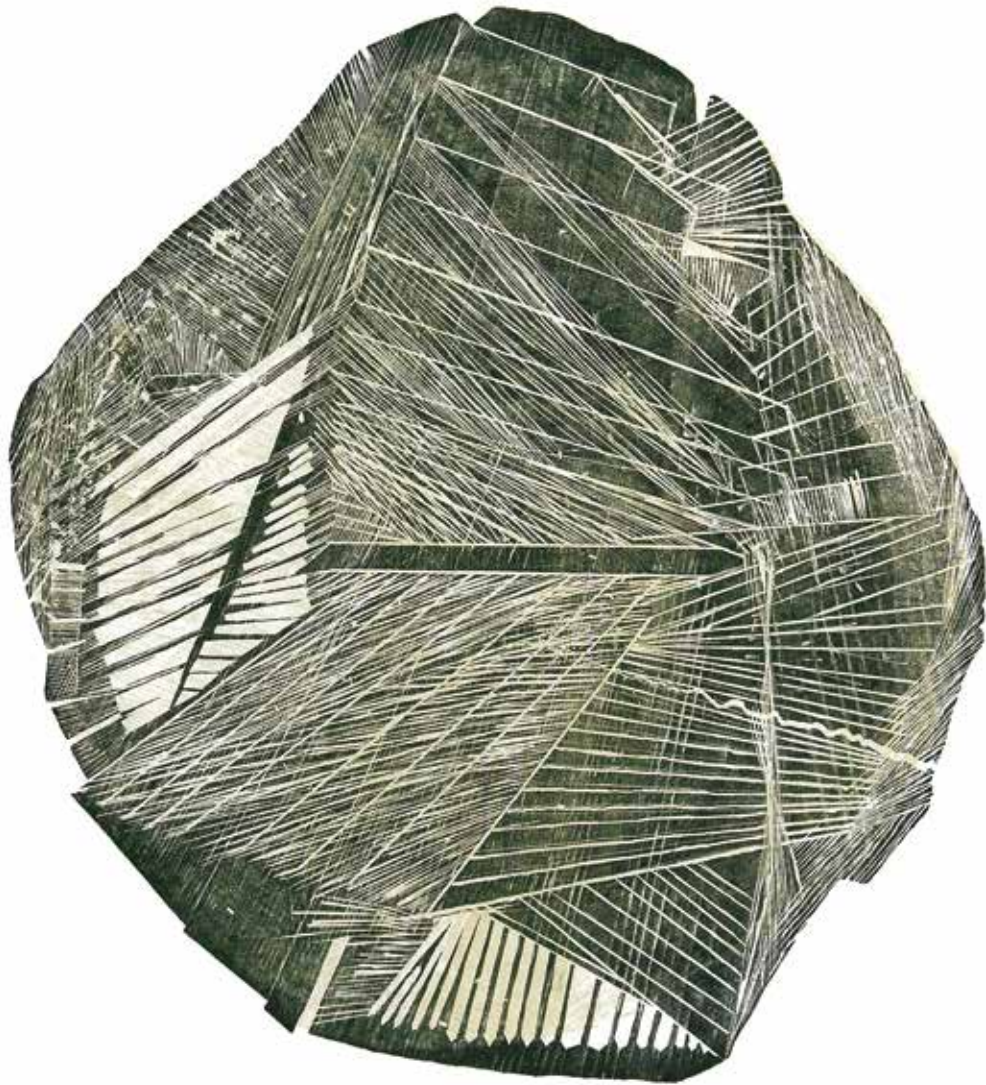
This year we have chosen Maria Bonomi, who began studying painting and drawing in the city of São Paulo in 1952 with Yolanda Mohalyi, to whom she was referred by Lasar Segall. At the same time, she also began studying engraving with Lívio Abramo. These encounters were the start of a career during which she became one of the foremost names in the history of Brazilian engraving.

Bonomi's interests diversified as she acquired experience in the world, including a stay at Columbia University in New York City, where she studied with Hans Müller and Meyer Schapiro as well as Seong Moy, a great Chinese artist with whom she learned to produce large engravings on subjects relating to the urban landscape.

She then began producing public art. Many of these works are outstanding, but I particularly appreciate the soil-cement panel entitled *Futura Memória*, which was made for the Latin America Memorial in São Paulo at Oscar Niemeyer's request.

Maria Bonomi has also had a brilliant academic career, making her presence in this report even more natural and justifiable. In 1999, she received a PhD in Visual Poetics from the University of São Paulo's School of Communications & Arts (ECA-USP). Her thesis on "Public Art – Expressive System/Anteriority" shows that art must be socialized.

Celso Lafer  
President, FAPESP



## THE INSTITUTION

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The São Paulo Research Foundation (FAPESP) is one of Brazil's leading funding agencies for scientific research. FAPESP supports research in all fields of knowledge through fellowships and research grants in addition to other funding efforts for the investigation, scientific exchange and dissemination of science and technology in the State of São Paulo.

FAPESP's financial support is guided by three clearly defined objectives: advancement of knowledge, application-driven research and research infrastructure.

The fellowships and grants are offered to Brazilian and foreign researchers in the State of São Paulo who are linked to public or private higher education and research institutions in all fields of knowledge.

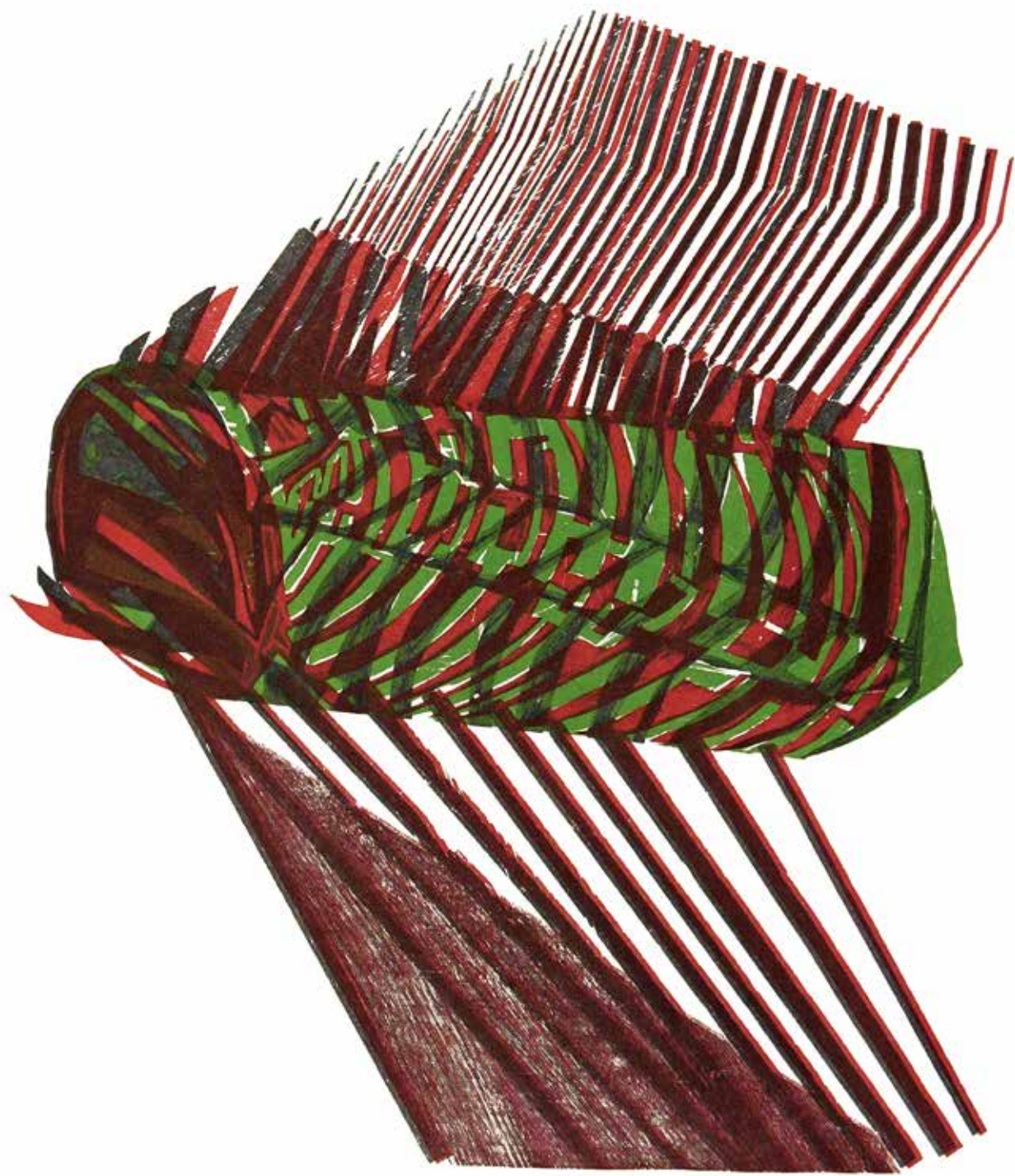
The fellowships and grants are contracted under the auspices of FAPESP's programs, which are distributed in three funding lines: the Regular Program, Special Programs and Research for Technological Innovation Programs.

Under the São Paulo State Constitution, one percent of all state tax revenue (excluding the percentage that is transferred to municipalities) is appropriated to fulfill FAPESP's established mission.

*Pedra Robot, 1974*  
Woodcut  
132 x 94.5 cm

Indelible China, hands  
accelerating time





## MANAGEMENT

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Under the State Constitution, FAPESP is an autonomous entity. A Board of Trustees and an Executive Board manage the Foundation. The Board of Trustees is responsible for setting the Foundation's general guidelines and for making the larger scientific, administrative and patrimonial policy decisions.

The Board is formed by 12 trustees who serve six-year terms. Six of the trustees are appointed by the governor, and the remainder are appointed by the governor based on a three-fold list of nominees, all of whom are suggested by public or private higher education and research institutions in the State of São Paulo.

The President and Vice President of the board are appointed by the governor and are based on a three-fold list that is prepared by the Board of Trustees and its members.

### BOARD OF TRUSTEES

The President of FAPESP also presides over the Board of Trustees and is the legal representative of the Foundation.

Composition of the Board of Trustees as of December 2014:

Celso Lafer (President)  
 Eduardo Moacyr Krieger (Vice President)  
 Alejandro Szanto de Toledo  
 Fernando Ferreira Costa  
 Horacio Lafer Piva  
 João Grandino Rodas  
 José de Souza Martins  
 Maria José Soares Mendes Giannini  
 Marilza Vieira Cunha Rudge  
 Pedro Luiz Barreiros Passos  
 Suely Vilela  
 Yoshiaki Nakano

*Buggy*, 1985  
 Woodcut  
 148 x 99 cm

Fascinating insect  
 royalty...

## EXECUTIVE BOARD

The Foundation's Executive Board constitutes the executive directorship of FAPESP and is formed by the Chair, the Scientific Director and the Administrative Director, who each serve three-year terms. All directors are appointed by the Governor based on a three-fold list that is compiled by the Board of Trustees.

### Members of the Executive Board of FAPESP in December 2014

José Arana Varela (Chief Executive)

Carlos Henrique de Brito Cruz (Scientific Director)

Joaquim José de Camargo Engler (Administrative Director)



## FAPESP INCOME AND EXPENDITURES IN 2014

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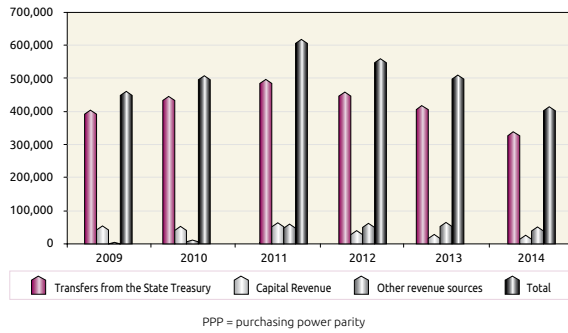
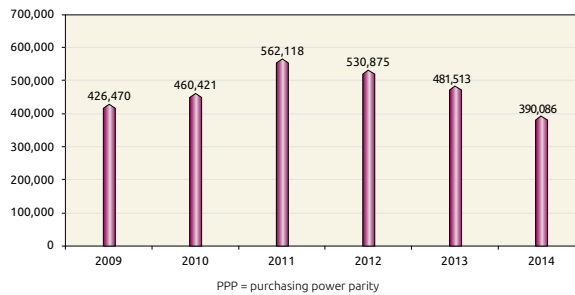
FAPESP income totaled \$ PPP 413.57 million in 2014. This sum refers to resources transferred by the State Treasury (81.70%), other sources of income (12.19%) from agreements signed with research-sponsoring agencies, companies and other Brazilian and foreign institutions interested in funding collaborative research in areas of mutual interest, and resources from its own capital revenue (6.11%).

By law, FAPESP must maintain profitable equity for investments in research to complement the resources received from the State Treasury.

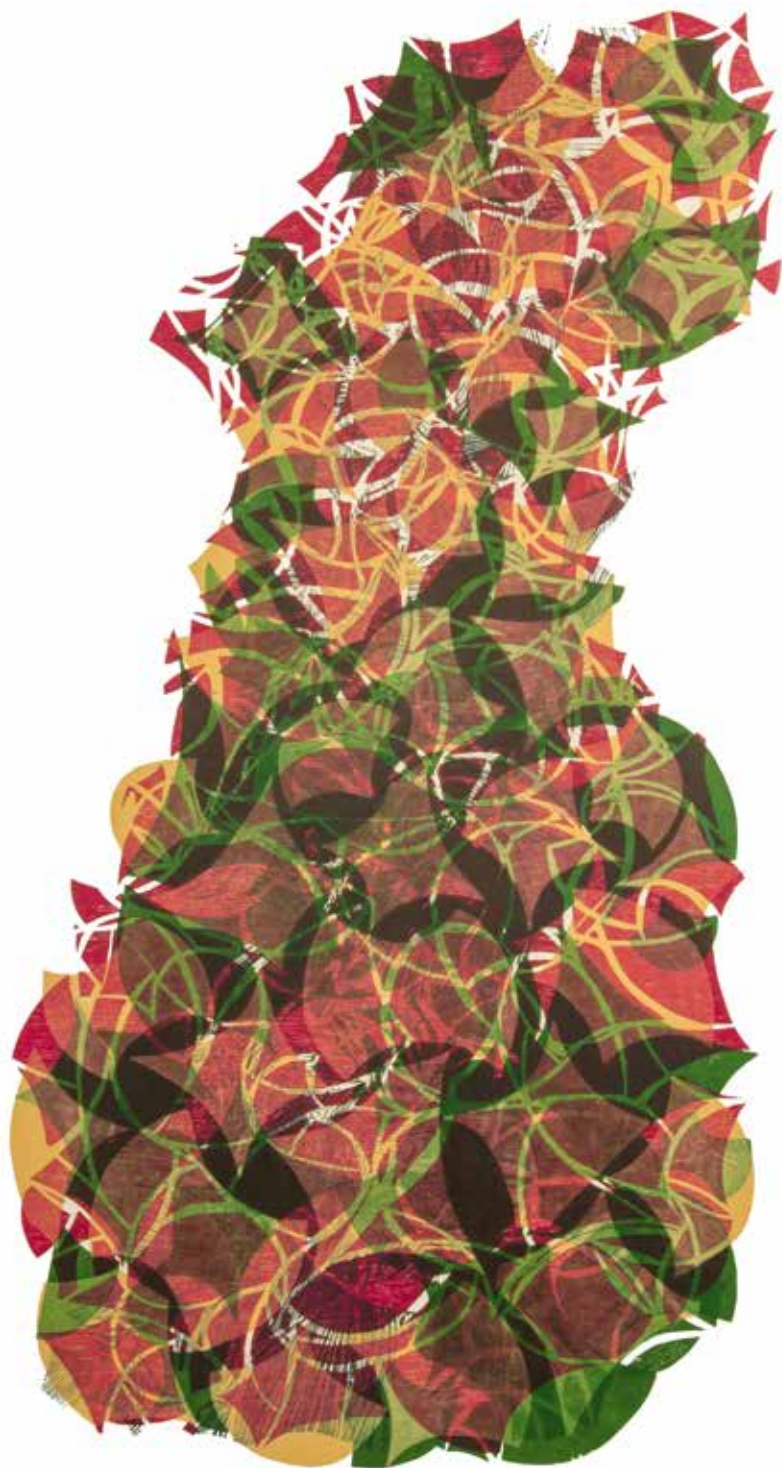
The Foundation funds research in all fields of knowledge. In 2014, funding outlays reached \$ PPP 390.08 million.

Health sciences traditionally receive the largest volume of resources due to the large number of researchers in this field in the state of São Paulo. In 2014, health sciences received 28.56% of the total FAPESP disbursements – \$ PPP 128.65 million. Other fields that traditionally receive most funds are: biological sciences, \$ PPP 71.47 million (15.87%); humanities and social sciences, \$ PPP 47.01 million (10.44%); engineering, \$ PPP 46.26 million (10.27%); and agronomy and veterinary sciences, \$ PPP 36.99 million (8.21%). Although not among the fields receiving the largest allocation of resources, astronomy and space science saw a 290% increase over the previous year.

In 2014, 47.55% of the funds, \$ PPP 214.19 million, went to projects coordinated by researchers at the University of São Paulo (USP). Projects at the University of Campinas (Unicamp) received \$ PPP 27.59 million (14.29%), and \$ PPP 60.39 million (13.41%) was directed toward projects at the São Paulo State University (UNESP). Federal institutions of higher education and research in the state of São Paulo received \$ PPP 54.67 million (12.14%).

**GRAPH 1**
**Evolution of FAPESP income in the 2009-2014 period (in millions of \$ PPP)**

**GRAPH 2**
**Evolution of FAPESP funding expenditures in the 2009-2014 period (in millions of \$ PPP)**








## EXPENDITURES BY FUNDING OBJECTIVE

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FAPESP's research funding has three main strands — advancement of knowledge, application-driven research, and support for research infrastructure.

Support for advancement of knowledge encompasses programs that train human resources and foster academic research. Considered vital to expand the frontiers of knowledge, this support is provided in the form of scholarships and regular research grants, grants for Thematic Projects, and grants under the following programs: Young Investigator Award and São Paulo Excellence Chairs (SPEC).

Support for application-driven research focuses on projects with a clear potential for applications in socially and economically important areas. Examples include projects supported by FAPESP through the Innovative Research in Small Business and the Public Policy Research Programs, research partnerships between universities and business through the Research Partnership for Technological Innovation and other programs, and academic research in health, agronomy, veterinary sciences and engineering and studies conducted under the auspices of BIOTA, BIOEN, Global Climate Change, RIDC, eScience, CInAPCe, Public Education, Science Journalism, and Support of Intellectual Property research programs.

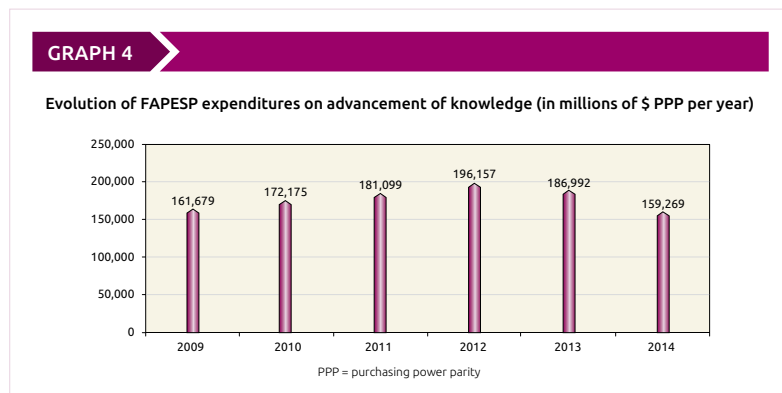
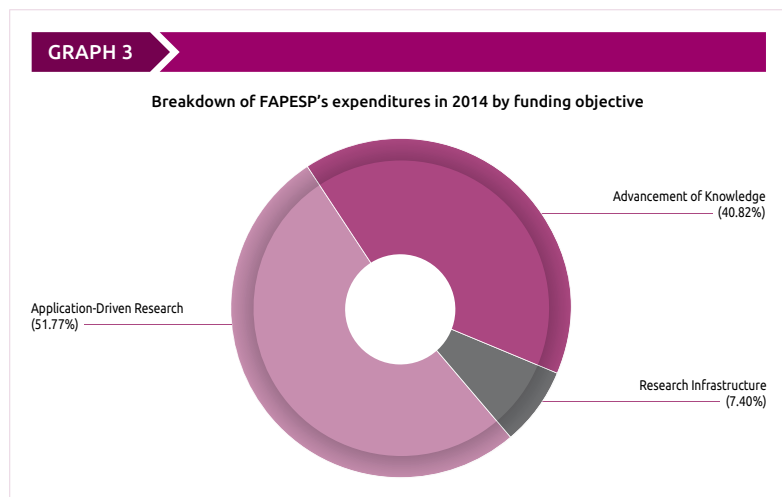
Support for research infrastructure involves funding to assure the infrastructure necessary for the continuity of research in São Paulo State. This includes equipping, refurbishing and modernizing laboratories, updating the libraries of higher education and research institutions, and providing fast internet access for researchers.

*Partitura (Tropicália)*, 1994  
Woodcut  
204 x 101.5 cm

Fractal incursion:  
420 pieces frenetically  
adjusted in a living  
record

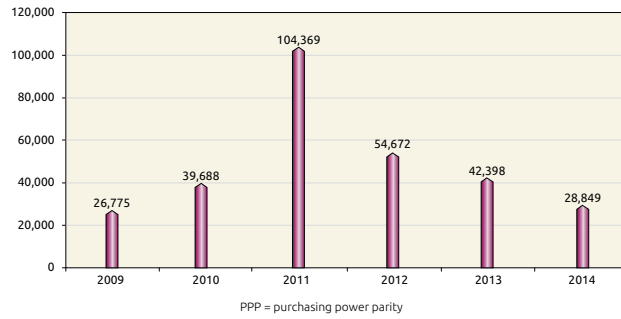
In 2014, expenditures by funding objective were as follows:

Advancement of Knowledge: \$ PPP 159.26 million (40.82%)  
 Research Infrastructure: \$ PPP 28.84 million (7.40%)  
 Application-Driven Research: \$ PPP 201.96 million (51.77%)



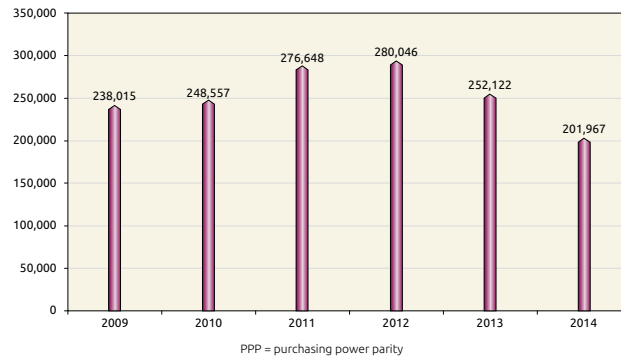
**GRAPH 5**

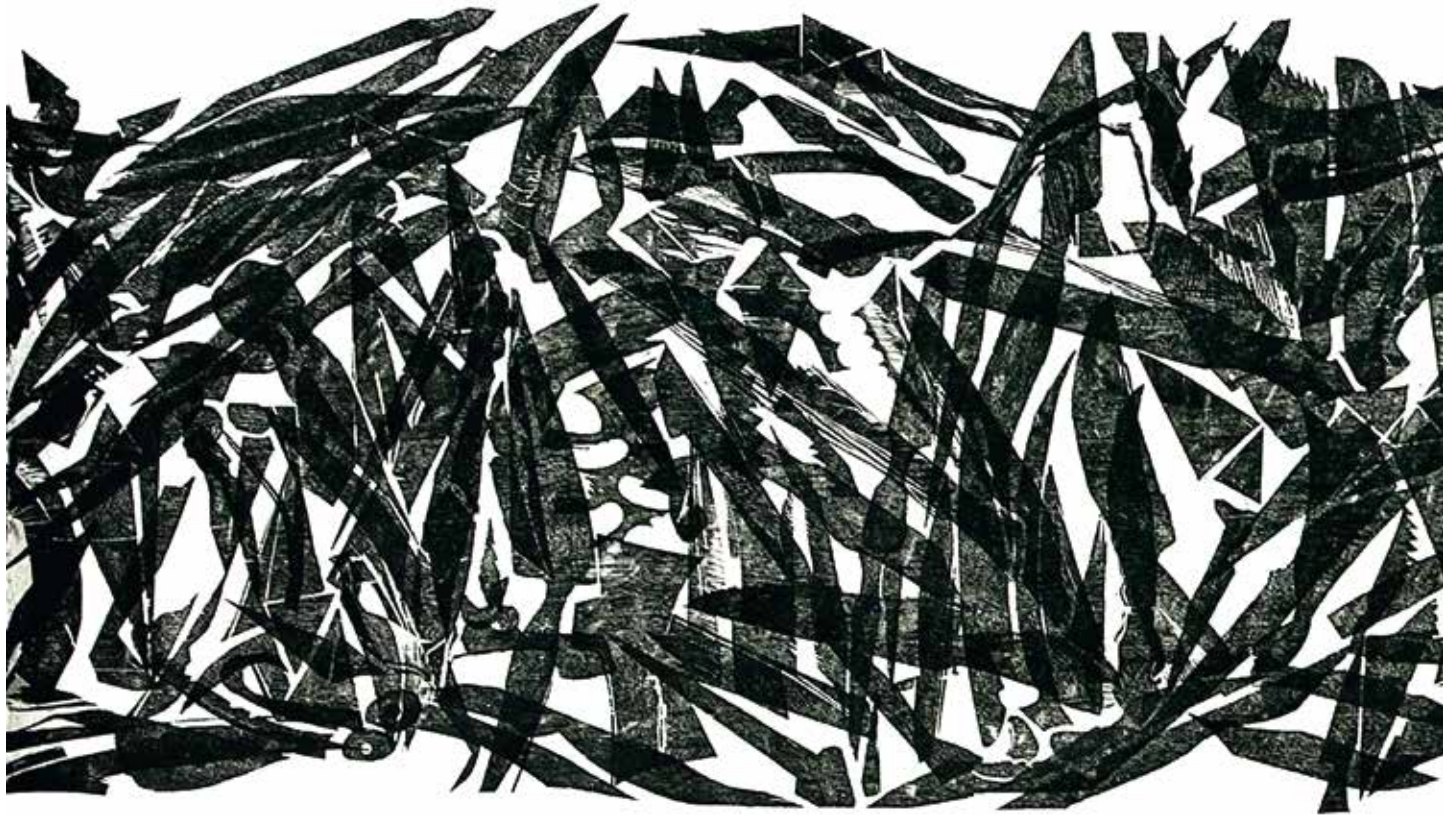
**Evolution of FAPESP expenditures on research infrastructure (in millions of PPP per year)**



**GRAPH 6**

**Evolution of FAPESP expenditures on application-driven research (in millions of PPP per year)**





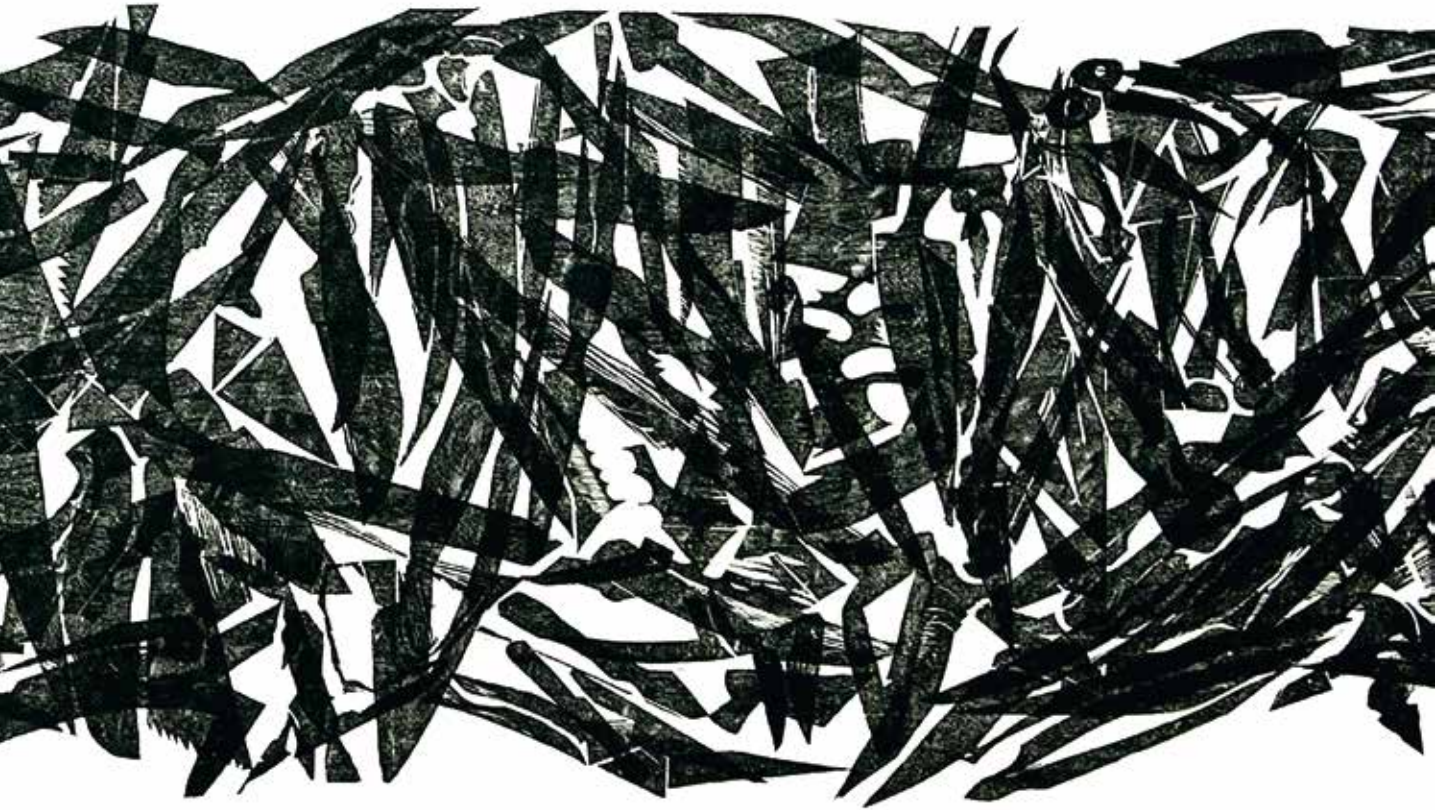
*Tetraz, V/B, 2003*

Woodcut

150 x 300 cm

Resplendent grouse...





*Tetraz*, 2003  
Matrix in cedar  
83 x 318 cm

## EXPENDITURES BY FUNDING LINE

FAPESP classifies its research projects into three funding lines: Regular Programs, Special Programs and Research for Technological Innovation Programs.

Regular Programs include research scholarships and grants that support investigator initiated research. Special Programs are designed to encourage research in cutting-edge fields and to meet needs in the São Paulo State science and technology system. Research for Technological Innovation Programs fund projects that have the potential to develop new technologies or to contribute to the formulation of public policies.

In 2014, the expenditures by funding line were follows:

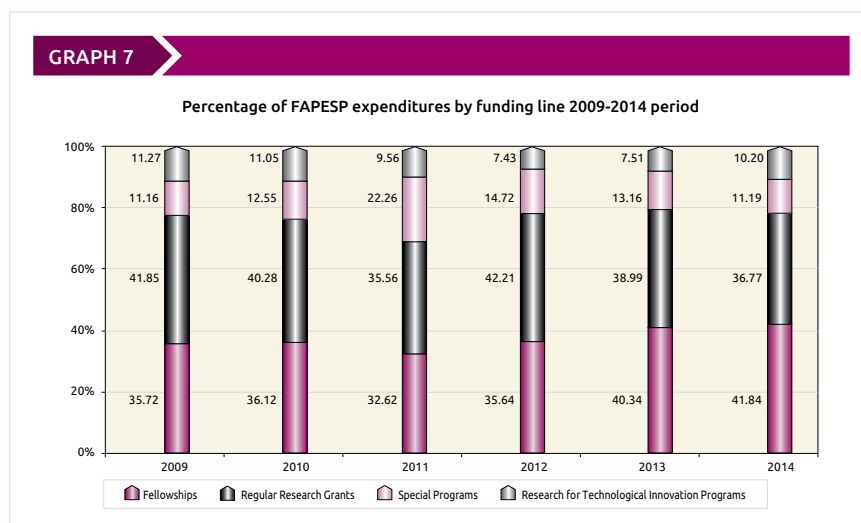
Regular Program: \$ PPP 306.65 million (78.61%)

Fellowships: \$ PPP 163.22 million (41.84%)

Regular Research Grants: \$ PPP 143.43 million (36.77%)

Special Programs: \$ PPP 43.66 million (11.19%)

Research for Technological Innovation Programs: \$ PPP 39.77 million (10.20%)



In 2014, the following programs were in effect under the respective funding lines:

#### REGULAR RESEARCH

##### Fellowships

##### Brazil

*Scientific initiation*

*Master's*

*Doctorate*

*Direct Doctorate*

*Postdoctorate*

##### Abroad

*Research (BPE)*

*Research Internships Abroad (BEPE)*

##### Regular Research Grants

*Research Project Grants*

*Regular Research Grants*

*Research Grants - Thematic Projects*

*Visiting Researcher Program*

*Organization of Scientific or Technological Meetings*

*São Paulo School of Advanced Sciences (SPSAS)*

*Participation in Scientific or Technological Meetings*

*Scientific Publications*

*Equipment Repair*

#### SPECIAL PROGRAMS

*Young Investigators Awards*

*FAPESP Research Program on eScience (eScience)*

*Public Education*

*Science Journalism*

*São Paulo Excellence Chairs (SPEC)*

*Training Human Resources for Research (Technical Capacity-Building)*

## Programs for Research Infrastructure

Research Infrastructure

*ANSP Network*

*Multiuser Equipment (EMU)*

*FAP-Livros Book Program*

*Program Technical Reserves Institutional*

*Research Infrastructure*

*Technical Reserves for ANSP Network*

*Technical Reserves for Program Coordination*

## RESEARCH FOR TECHNOLOGICAL INNOVATION PROGRAMS

*BIOTA-FAPESP Program*

*FAPESP Bioenergy Research Program (BIOEN)*

*FAPESP Research Program on Global Climate Change (RPGCC)*

*Research, Innovation and Dissemination Centers (RIDC)*

*Inter-institutional Cooperation in Brain Research (CINAPCE)*

Public Policy Research Programs

*Public Policy Research*

*Public Policies Research for the National Health Care System (PP-SUS)*

Innovative Research in Small Business (PIPE)

Research Partnership for Technological Innovation (PITE)

*Program for Support of Intellectual Property (PAPI/NUPLITEC).*

## NUMBER OF PROJECTS CONTRACTED

In 2014, 11,609 new research projects were contracted among all funding lines:

Fellowships: 6,364

Regular Research Grants: 3,949

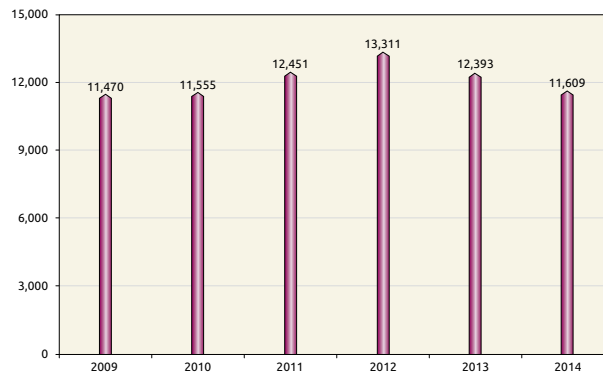
Special Programs: 1,046

Research for Technological Innovation Programs: 250

In 2014, a total equivalent to 11,197 scholarships were paid. These included Regular Fellowships in Brazil (Scientific Initiation, Master, Doctorate, Fast-Track Doctorate and Postdoctorate) and fellowships contracted under the Young Investigator Award, Science Journalism, Innovative Research in Small Business (PIPE), and Technical Training programs.

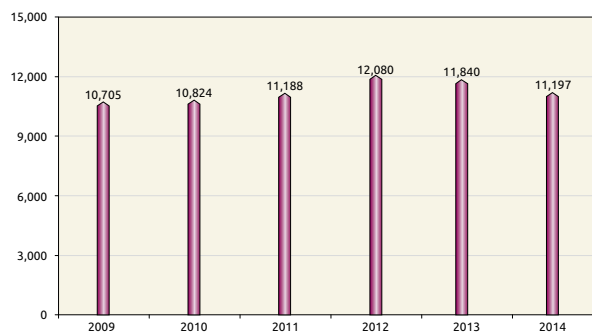
**GRAPH 8**

**Evolution of the number of FAPESP's contracted projects - 2009 a 2014**



**GRAPH 9**

**Evolution of the number of active fellowships\* - 2009-2014**



\* Mean annual number of fellowships paid monthly



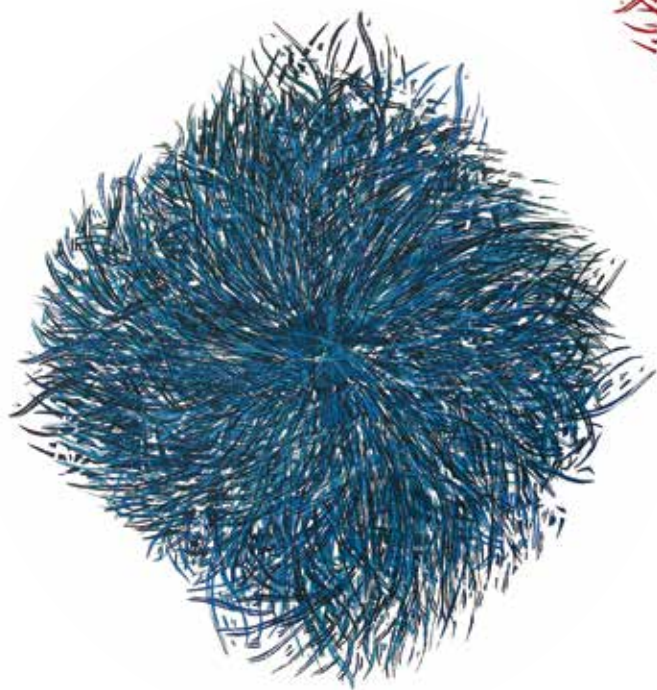
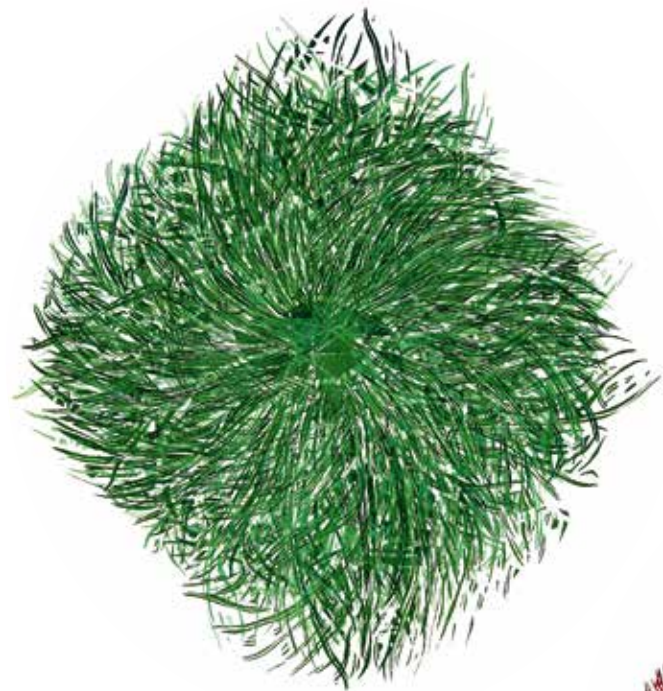


*A Ponte*, 2011  
Woodcut  
180 x 268 cm,

Crossing at this  
very moment...









## FAPESP BY NUMBERS, 2014

---

Income: \$ PPP 413.57 million

Expenditures with funding: \$ PPP 390.08 million

Expenditures by funding objective:

Advancement of Knowledge: \$ PPP 159.26 million (40.82%)

Research Infrastructure: \$ PPP 28.84 million (7.40%)

Application-driven research: \$ PPP 201.96 million (51.77%)

Expenditures by funding line:

Regular Program: \$ PPP 306.65 million (78.61%)

Fellowships: \$ PPP 163.22 million (41.84%)

Regular Research Grants: \$ PPP 143.43 million (36.77%)

Special Programs: \$ PPP 43.66 million (11.19%)

Research for Technological Innovation Programs: \$ PPP 39.77 million (10.20%)

Number of new projects contracted in 2014:

Fellowships: 6,364

Regular Research Grants: 3,949

Special Programs: 1,046

Research for Technological Innovation Programs: 250

In 2014, FAPESP received 11,834 applications for scholarships in Brazil and abroad. The largest quantity of applications and approvals were in Scientific Initiation, followed by other modalities in Brazil, such as Master (2,735 applications and 1,006 approvals), Doctorate (2,337 applications and 1,027 approvals), and Postdoctorate (1,827 applications and 838 approvals).

### INTERNATIONAL RESEARCH COOPERATION

FAPESP strives to increase the scientific production by researchers in the State of São Paulo in collaboration with researchers in other countries and thereby to enhance the international visibility and impact of Brazilian

*Hydra, V/A, V/B, V/C, 2003*  
Woodcut  
170 x 170 cm

"Inspired by a medusa  
that stung me"

research. Its internationalization strategy includes funding lines designed to stimulate academic exchange, such as Research Internships Abroad (BEPE), which enable young students and postdocs with scholarships from FAPESP to train in research centers abroad, and the São Paulo School of Advanced Sciences program, which helps scientists from São Paulo organize events that bring world-famous researchers to the state as well as young graduates or postdoctoral students from other countries and regions.

An example of the impact of these measures is that postdoctoral opportunities in São Paulo have attracted foreigners. Twenty percent of the postdoc scholarships were awarded to researchers from other countries in 2014.

The number of Research Internships Abroad (BEPE) funded in 2014 totaled 984, disbursements under the BEPE Program in the year corresponded to 13% of total expenditures on scholarships. The United States, France, the United Kingdom, Spain, and Canada were the most frequent destinations for these trainees. The US, the UK, and Canada mostly attracted trainee researchers in agrarian, health and biological sciences, while France was preferred for physical sciences and mathematics, earth sciences, and health sciences, and Spain for health sciences.

FAPESP also runs programs that bring top-tier researchers from abroad to lead research groups at universities in São Paulo, such as São Paulo Excellence Chairs (SPEC) and Young Investigator Awards (JP). In 2014, FAPESP approved three new SPEC projects in health sciences, economics and administration, and biological sciences.

The fundamental instrument for international collaboration are scientific cooperation agreements between FAPESP and renowned foreign institutions interested in jointly funding research. In 2014, FAPESP had 125 ongoing international cooperation agreements with 114 organizations, including research funding agencies higher education and research institutions, multilateral organizations and companies. Twenty-eight calls for research proposals were issued under these agreements.

The results of research conducted in collaboration with scientists from other countries have been presented and discussed at FAPESP Week symposia, which



the Foundation has regularly organized jointly with partner institutions since 2011. Researchers from São Paulo and the host country present findings from work in areas of common interest at these events, which open opportunities for future collaboration.

In previous years, FAPESP Weeks were held in the United States (Washington DC, Morgantown, Cambridge, Charlotte, Raleigh, and Chapel Hill), in Canada (Toronto), Spain (Salamanca and Madrid), Japan (Tokyo), and the United Kingdom (London). In 2014, three new editions brought researchers from São Paulo together with scientists from China (Beijing) and Germany (Munich) as well as the US once again (Berkeley and Davis). The exhibition *Brazilian Nature: Mystery & Destiny* was held in parallel with each FAPESP Week. Adapted to each local setting and language, the show displays engravings by German naturalist Carl Friedrich Philipp von Martius, a leading nineteenth-century naturalist and one of the most important documenters of Brazilian flora.

In addition to the FAPESP Week series, another important overseas activity was FAPESP-US Collaborative Research on the Amazon, an event held on October 28 in partnership with the US Department of Energy (DOE). Researchers from Brazil and the US attended the event at the Woodrow Wilson Center's Brazil Institute in Washington DC to discuss some of the most significant research on biodiversity, climate and socio-economic issues in the Amazon. Some of these studies are US-Brazil collaborations linked to research projects supported by FAPESP and the DOE.

In 2014, FAPESP also participated in events organized by other institutions, such as Naturejobs Career Expo, one of the world's largest fairs and conferences that is exclusively for science career opportunities. Held by the Nature Publishing Group every year in London, in 2014 it was also held in Boston, Massachusetts, for the first time. FAPESP's booth and presentations at the event offered research and postdoc opportunities in São Paulo for young scientists from other countries.

## ISSUES ADDRESSED BY FAPESP

In 2014, in addition to the issues traditionally addressed by its main research funding programs, such as biodiversity, bioenergy, global climate change and technological innovation, FAPESP also turned its attention to the challenges of e-science, astronomy, aviation, scientific integrity, higher education, and government policy for science, technology and innovation (ST&I), among others.

FAPESP was very much in the news at home and abroad in 2014, with frequent reports on its local and international activities. During the year, it featured in 9,166 stories in the press worldwide, all of them favorable to its institutional image.

FAPESP's portal received 2.6 million visits, and over 13,500 people attended events organized by FAPESP in 2014. The Virtual Library (BV), a comprehensive online database providing information on all projects funded by FAPESP, recorded approximately 4 million page views during the year. *Agência FAPESP's* daily newsletter had 107,000 subscribers, while the websites of *Agência FAPESP* and *Pesquisa FAPESP* magazine received more than 1 million hits.





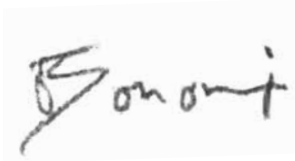
*Epopeia paulista*, 2004  
Concrete  
7,300 x 300 cm  
Estação da Luz, São Paulo



Blind children read panel by touch.  
Visit organized by CPTM's "Tomorrow's User"  
Program (*Usuário do Amanhã*)



*A Construção de São Paulo*, 1998  
Concrete  
two sides 300 x 600 cm  
two sides 270 x 300 cm  
Jardim São Paulo  
subway station, São Paulo



Maria Bonomi was born in Meina, a village located on the shores of Lake Maggiore, near Milan, Italy, in 1935. In 1944, the young girl and her family left Europe to escape the ravages of World War Two.

In 1946, they arrived in São Paulo, Brazil's largest city, where Bonomi has built a solid artistic career. She began studying painting and drawing in 1952 with Yolanda Mohalyi, to whom she was referred by Lasar Segall. She learned encaustic with Karl Plattner, and in 1955, she met printmaker Lívio Abramo, her first real mentor. From this meeting was born an intense relationship with the matrix. Her passion and dedication to this art form have made her one of the foremost names in the history of Brazilian engraving.

Bonomi's woodcuts are an embodiment of vitality and modernity. She has continuously pursued innovative artistic research and has expanded her graphic capabilities with the aim of reaching new audiences. Printmaking is born from "graphic thought", she believes, in which the groove is the protagonist regardless of the support. Indeed, her work can be "printed" on polyester, bronze or even concrete, as well as on paper. Her priority is to be seen by the largest possible number of people. So much so that as far back as 1960, she was teaching graphic arts at Estúdio Gravura, which was a studio she founded in São Paulo with Abramo, her foremost teacher.

In 1952, she established important artistic relationships in Brazil and Europe with Enrico Prampolini and Emilio Vedova. In 1958, she studied with Chinese master Seong Moy at the Pratt Institute in New York.

She has won many prizes during her long career, including best Brazilian printmaker at the 1965 São Paulo Biennale, an award at the 1967 Paris Biennale, and the International Jury Prize at the 1983 Ljubljana Graphic Arts Biennale.

After 1970, Bonomi devoted herself for several years to the series *Transamazônica e China*. Inspired by travels in the Amazon, Japan and China, these pieces far exceed the typical dimensions of prints and indeed can be termed monumental.

Her wide-ranging graphic research led in 1972 to *Solombras*, which are pieces in colored polyester reproduced from printmaking matrices that pay tribute to Cecília Meireles.

In *Epigramas* (1982), clay is transmuted into objects cast in bronze, brass and aluminum. The same happens in her installations and trophies.

Bonomi has designed theater sets and costumes since 1960 and has won countless awards, including the 1966 Molière Prize as stage designer for *The Taming of the Shrew*.

As recognition of her work blossomed at home and abroad, she began to receive public art commissions from property developers, entrepreneurs and architects. Among the most outstanding works are the altar for Igreja da Cruz Torta in São Paulo (1976), giant hanging panels for Hotel Maksoud Plaza, for which she was awarded a Grand Prix by the São Paulo Art Critics Association (APCA) in 1979, and *Futura Memória*, which was made for the Latin America Memorial in São Paulo at Oscar Niemeyer's request (1989).

Bonomi's political positions are also a significant part of her life. In 1971, she and master printmaker Octávio Pereira launched an album of lithographs that openly opposed the military junta that had taken over Brazil a few years earlier.

Years later, while delivering a lecture on Chinese art at Museu de Arte Moderna de São Paulo (MASP), Bonomi was brutally arrested, hooded, bound, and taken to the notorious secret torture center on Rua Tutoia, where she was accused of being a cryptocommunist and was submitted to intensive interrogations. Eventually, Bonomi was released without formal charges.

Bonomi's combative spirit and dedication can also be seen in her preoccupation with public enjoyment of art. As part of a solo show at Museu de Arte Moderna do Rio de Janeiro (MAM/RJ) in 1971, she set up a studio to teach the woodcut process to visitors, who were also able to buy prints at affordable prices.

Her 1999 doctoral thesis ("Public Art – Expressive System/Anteriority"), which argues that art must be socialized, also demonstrates the importance of public art to Bonomi, who received a PhD in Visual Poetics from the University of São Paulo's School of Communications & Arts (ECA-USP).

Bonomi's most ambitious collective art project is *Epopéia Paulista* (2005), a 73-meter panel installed inside São Paulo's Luz train station. To produce it, she set up a studio in the annex to the University of São Paulo's Museum of Contemporary Art (MAC/USP), where she taught artists, workers, technicians and students to help engrave the matrices. She repeated this collective experience with *Etnias: do Primeiro e Sempre Brasil* (2008), a series of panels for the Latin America Memorial, again commissioned by Niemeyer.

Commemorating a career of more than 60 years, Bonomi began a series of solo exhibitions that displayed a selection of her most important works. In shows at Pinacoteca de São Paulo (2008), Gallery 32 in London (2009), CCBB in Brasília (2011), Maison de l'Amérique Latine in Paris (2012) and Círculo de Bellas Artes in Madrid (2013), the quality and energy of her art was demonstrated by works such as *A Ponte*, *Love Layers* and *Amor Inscrito*, three-dimensional works in metal, and the series *Águas Sólidas*, which used laser-cut steel.

Bonomi's creative vigor can also be seen in *Circunstanciam* (2014), an installation commissioned by SESC Belenzinho in São Paulo, with 15 woodcuts in 21 4x4 m frames amid suspended cables and mirrors, using recyclable paper and degradable aluminum. This work and *Infecção de Memória* (2005) were deliberately ephemeral installations designed to be dismantled and relocated to other public spaces.

In 2015, Bonomi was invited by China's Guanlan International Print Biennial to join the Guanlan Original Printmaking Base and is currently producing new work that both revisits old themes and reinvents artistic propositions, just as she has always done throughout her irreproachable career.





*Yugoslavia II – A Guerra, 1993*

Etching

67.6 x 95.3 cm

Record of injustice

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