

High-level partnerships

Pilot program draws scientists from abroad to form new research groups in São Paulo

Fabício Marques

PUBLISHED IN NOVEMBER 2012

Two thematic projects have now been approved under a FAPESP pilot program known as the São Paulo Excellence Chairs (SPEC), which seeks to establish collaborations between institutions from São Paulo State and high-level researchers abroad. One such project will bring to Brazil a husband-and-wife team of Brazilian scientists, Victor and Ruth Nussenzweig, both 84, who have lived in the United States since the 1960s. Their work has become the international benchmark in the search for vaccines and treatments against malaria. Andréa Dessen de Souza e Silva, a Brazilian who lives in France, also had a project selected under the program and will lead a research group at the Biosciences National Laboratory (LNBio) in the city of Campinas. Since 2000, Souza e Silva has led a bacterial pathogenesis research group at the Institute of Structural Biology in Grenoble, France.

The goal of the SPEC program is to attract renowned scientists to Brazil to coordinate thematic projects in their areas of expertise at universities and laboratories in São Paulo. The researchers continue to be affiliated with their home institutions but are required to spend at least 12 weeks of each year of the project's five-year duration in Brazil while coordinating a group of FAPESP grant recipients, including post-doctoral associates, PhDs and even under-

graduate students. "The goal is to attract highly qualified researchers and establish core research groups in areas where we want to excel and to enable these groups to advance more quickly," says Hernan Chaimovich, special advisor to the FAPESP scientific director. The initiative, he says, is part of the organization's strategy to stimulate the internationalization of science in the state of São Paulo. "FAPESP's mission is to improve the quality of science, technology and innovation in São Paulo State and that is why we are seeking to internationalize. We want the groups formed by initiatives such as SPEC to be able to obtain support from international research-sponsoring agencies," he says. The program is offered to institutions and highly qualified researchers interested in establishing partnerships.

Research conducted in the United States by the Nussenzweigs led to prototype vaccines tested in the 1980s, which were only able to guarantee immunity for very short periods. Since 1960, the Nussenzweigs have been affiliated with New York University, where they both work today, in the field of malaria parasites. The couple is currently engaged on two fronts: the search for a vaccine against malaria caused by the *Plasmodium vivax* parasite and techniques to destroy proteins essential for development of the parasite.



Two projects have been approved for the program, and two others are being evaluated

Ruth and Victor Nussenzweig, in São Paulo: thematic project and core research training at UNIFESP

NEW INHIBITORS

The thematic project that the Nussenzweigs will coordinate at the Federal University of São Paulo (UNIFESP) seeks to characterize enzymes essential to plasmodium development and find new inhibitors, with the potential to develop drugs against malaria. “I’ll bring a Chinese researcher who has worked with me in New York for four years, and we will also recruit other PhDs and post-doctorates,” says Víctor Nussenzweig. They will work at UNIFESP with researchers that have been accepted at New York University as doctoral or post-doctoral students, such as professors Mauricio Martins Rodrigues, Sergio Shenkman and Nobuko Yoshida. The terms of the project grant will be signed in the next few weeks.

Last July, Souza e Silva became the first researcher selected under the pilot program. She graduated from Rio de Janeiro State University (UERJ) in 1987 with a chemical engineering degree and moved to the United States 25 years ago. Before settling in France, she received her PhD from New York University and did postdoctoral work at Albert Einstein College of Medicine and Harvard University. She specialized in the study of protein structures, using biochemical and crystallographic techniques. “I’ve always studied protein structures associated with medicine. I’ve been working with HIV and with inflammation,” she says. She is currently focusing on the viru-

lence of bacteria by studying the three-dimensional structure of proteins that form the bacterial wall. The goal is to understand the structures for the synthesis and repair of the bacterial wall and to try to block the infectious process. “One target is the structures that lead to antibiotic resistance,” she says. That is the focus of the work to be conducted in Campinas.

Souza e Silva has long wanted to return to Brazil. “However, I have a position in Grenoble and two small children, and I did not want to return permanently. The SPEC program format was perfect,” she says. After lecturing last year at LNBio, she initiated talks with the laboratory director, Kleber Franchini, to collaborate with the institution. In addition to LNBio hiring David Neves, a research assistant who did post-doctoral research with Souza e Silva in France, the group will also have two PhD research grant recipients and one post-doctoral research grant recipient. “I have a person I can trust coordinating the group in Campinas,” she says. The arrangement will allow an intense exchange between Campinas and Grenoble, with researchers going back and forth between the two institutions. Two other projects are being evaluated by FAPESP under SPEC, one in the area of climate change and another in materials science. “Proposals can be made in any field of knowledge, as long as they involve high-level researchers,” says Chaimovich. ■