

Brazil's science march and the role of nationalism and the military

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Dozens of Brazilian cities saw marches and demonstrations on April 22 in solidarity with the US March for Science. The largest demonstration was held in São Paulo, where about 500 scientists, students and supporters braved an atypical autumn rain to listen to speeches by workers on some of the most challenging issues facing tropical diseases sciences in the country and prominent figures such as the president of the Brazilian Society for the Advancement of Science (SBPC), biochemist Helena Nader, and IPCC member Paulo Artaxo. Brazilian Science Academy (ABC) president, physicist Luiz Davidovich, addressed the demonstration in Rio.

Genuine concern over the international and democratic issues facing scientific endeavor and solidarity with the worldwide movement against the far-right assault on scientific reasoning that animated the international movement was expressed by many speakers as well as those demonstrators interviewed by the WSWWS. Nonetheless, the Brazilian demonstrations, and São Paulo's in particular, were held under the shadow of national, economic and military interests that has been cast for almost a century over the country's scientific community.

Brazilian science is facing a deep crisis, with budget cuts initiated in the last years of the Workers Party (PT) rule in 2014 ending up in the slashing of the Science Ministry budget for 2017 by 50 percent under former vice president Michel Temer's administration. Meanwhile, the Science Ministry has been merged with the Communications department, which is responsible for, among other things, many transport-related activities.

Against such a backdrop, newspaper articles by nationally-known researchers during the run-up to the demonstration appealed explicitly to the nationalist outlook that dominated the PT's policies towards science.

Nader's initial open letter in support of the international movement on March 30 was consistent with the goals of an international and democratic defense of worldwide collaboration in science. But later, an article by Nader and Davidovich on April 12 in the daily *Folha de São Paulo*, seeking to clarify the extent and relevance of the budget cuts to scientific activities, chose examples such as the impact on internationally competitive Brazilian jet manufacturer Embraer, whose light attack planes have been supplied to Afghanistan's US-puppet regime, and the role of "national research" in bringing the state-run oil giant Petrobras to world leadership in deep-sea oil extraction.

The opinion piece, called "Brazilian Science, last sighs?", shows that the budget for 2017 represents half of that of 2005, factoring in inflation, despite a doubling of the number of undergraduate students and doctoral titles issued annually during this period.

The São Paulo march call, issued by the graduate students union of the country's main university, Universidade de São Paulo (USP), among other organizations, states that the number two goal of the march, after defending greater salaries and more jobs for scientists, is to defend science "in the name of national sovereignty." Point eight of the call makes the absurd claim that "countries like United States, those in Europe, China and South Korea make investments in science in times of crisis in order to

overcome them." Such a claim flies in the face of the the reality that brought people into the streets all over the world.

A virtual silence on the international far-right offensive was only broken by a few speeches, like that of the former head of the National Science and Technology Council, Hernan Chaimovich, who stated that "science ... not only disrupts social inequality, but makes people believe in democracy." He added, "I hope that this is just the beginning all over the whole world of the tackling of the arguments of power."

Along similar lines, biologist Walter Neves, referring to the growth of the evangelical Christian caucuses in Brazil's state parliaments and national Congress, stated: "We might become the second largest creationist country on earth, after the United States ... I have no doubt that in a few years they will try to forbid teaching evolution in schools." Neves gained worldwide recognition as head of the group which since the 1980s has studied Luzia, a human fossil that points to a much earlier human presence in South America than had previously been believed.

The absence of more interventions like that of Neves in the demonstration was noteworthy, given that Brazilian teachers have in recent years gone on strike over the country against classroom "gag rules" directed at left-wing speech and the teaching of science.

On the other hand, biologist Carlos Menck, former head of several Brazilian branches of the Genoma project, reached the lowest point of the rally, conflating nationalism with one of its most virulent forms in Brazil, São Paulo regional chauvinism, by referring to policies of the discredited São Paulo coffee-grower aristocracy of the 1930s and stating that "São Paulo isn't the country's richest state by chance, it's because of science."

Critically, the history of Brazilian science is fraught with examples of nationalist and military interests shutting down critical research and prosecuting leading scientists.

One of the main impulses for the development of research centers in the country after World War II was the military's desire to exploit the country's uranium depots some 300km northeast of Rio de Janeiro, the fifth largest in the world.

The development of military nuclear technology would be the main thrust for the development of the energy industry and also of physics, math and engineering—including aviation and shipbuilding. Leading physical research in the country is to this day developed in military areas, imposing anti-scientific constraints on scientists' work.

According to official figures released in 2015 that were gathered in the context of Congressional hearings on the crackdown on dissent during the 1964-1985 US-backed dictatorship, nationalist hysteria led to the firing of at least 471 leading researchers suspected of socialist and "anti-national" activities. The most notorious case was that of the top disease research and control center, the Oswaldo Cruz institute north of Rio, which involved the violent invasion and destruction of research archives and material by uniformed soldiers and led to an almost immediate outbreak of long-controlled Chagas disease in the city.

Brazil resisted signing the Nuclear Non-Proliferation Treaty until 1998,

and only then was atomic bomb research decisively defunded.

Scientific investment under PT rule was from the start dependent upon the military. Roberto Amaral, science minister in PT's first term, interviewed by BBC on January 5, 2003—his fifth day on office, refused to deny that research would be directed to the development of an atomic bomb and stated that impetus for the development of science would come from a new program to develop nuclear-powered submarines. He stated: "When you develop a submarine you develop at the same time physics, math and engineering. I have this strategic goal."

Later, policy changes on national secrecy over Brazil's nuclear—supposedly civil—research led to a row with the United Nations and the United States in 2004 over the International Atomic Agency inspections, as was widely reported by the press.

The nuclear submarine program—with the first ship due to set sail at the end of the decade—finally became a reality in 2008 at a cost of more than a billion dollars. It was part of a new defense plan decreed by PT President Lula da Silva, which renewed the government's commitment to "the national draft to the military forces as a means of uniting the nation above differences of social class."

Simultaneously, the discovery of the so-called "Blue Amazon" of deep-sea oil and gas deposits led to a boom in Petrobras investment in chemical research and the opening up of federal universities in oil-refining hubs directed towards its development.

As the commodity boom and the ever-widening Lava-Jato investigation initially centered on bribery schemes at Petrobras combined to bring the company and associated industries to a virtual paralysis, the head of the nuclear submarine program, reserve Admiral Othon Pinheiro da Silva, was arrested on charges of taking bribes from Odebrecht, the private construction giant now at the center of the scandal. Odebrecht had been granted by the PT government the right to build the shipyards for the submarines south of Rio, and even create a new branch of the company, Odebrecht Defense and Technology, to that end.

Contrary to the claims of the leaders of the Brazilian Science Marches, viewing science through the prism of "national interests" or even "sovereignty" is precisely what has led to the present crisis in science in Brazil today.

The event in São Paulo provided a clear vindication of the WSWs statement of April 19 on "**Science and Socialism**". For many of these leading scientists who spoke as well as those who joined the rally, the application of a scientific understanding to history and society—which means necessarily taking up a study of Marxism—remains the critical task.

We post below sections of the interviews conducted by the WSWs team in São Paulo, which also translated and distributed the April 19 statement.

Asked about the international situation that led to the international call for the march, João Steiner, an astrophysics professor at USP, said: "Trump is an example of this obscurantist attack, but he is not the only one. He comes amid the creationist movements, movements against climate change science, which have picked up the pace and he is the outcome of it."

Asked about the worldwide drive to war related to attacks on science, he replied, "I think a new world war cannot be dismissed, certainly not. Trump's bellicose discourse is very dangerous in that regard; if you look the situation of World War I, more than that of World War II, that's what we are seeing now."

His fellow atmospheric sciences professor Maria de Fátima said: "I consider it a priority to keep investments in education and science education in particular ... I'm also worried that the Environment Ministry is being defunded. There were always obscurantists, but now they find the means to get their message out, and there is an audience too. I don't know whether it is because of lack of information, but people think that these are answers to their questions, the social and economic ones."

Paulo and Felipe, engineering researchers, were also worried with the

reactionary mood against scientific reasoning. Felipe said: "There's an abandonment of the state research facilities, and also an ever bigger pressure for immediate sale of results," which "slowly buries science and technology in our country." These were inappropriate "because science is a long term development."

Paulo criticized the subordination of science to profit by governments worldwide, both right-wing and nominally "left": "We are living a science apocalypse, but Brazil is even worse. But it all boils down to control by financial markets, which are only interested in immediate profits. And every government is in their pockets. What's the difference between a Democrat and a Republican in the US? Hollande did everything just like Sarkozy in France. People are fed up and vote for anybody that will take those people out. And in both countries, the middle class is very impoverished. Obama bombed seven countries, what's the difference between him and Bush? And religious extremism is growing because nobody is solving people's problems. The left only discusses so-called identity politics, which are very important, but it doesn't discuss the economy anymore; if you take the PT government, it's a disaster and it's Lula's fault, he put Temer there. Both left and right are neoliberal today."

Britney, a doctoral exchange student in zoology from Ohio, said: "One of the big pushes for why they wanted to do with this march was to open the doors to people who are not scientists, because it rebounds on all of us. Science is intrinsically a part of human life, and there is nothing someone can do to separate themselves from that. Dictatorship tries to do this because they don't understand, and it's very human to be afraid of things you don't understand and don't know. Science is for the good of all people. We need to figure out how to ensure food security for every human on this planet, with seven billion people, feeding all of us without harming the one and only planet we have. We need to make sure that people are not dying at the rates as they are of malaria, in Africa, of dengue, here in Brazil."



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