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## LETTER FROM THE EDITOR

## Public funding of science, geogenomics and death rituals

Alexandra Ozorio de Almeida | EDITOR IN CHIEF

Criticism directed towards the public funding of research is not new, be it in Brazil or abroad. When fewer resources are available, scrutiny of public spending tends to increase. The problem is that policies aimed at immediate outcomes in science tend to sacrifice so-called basic research, which is carried out with no direct concern about its usefulness. Increasing our understanding of nature and its laws can – and frequently does – result in applicable knowledge and innovative solutions to problems, but that is not the main objective of basic research. This edition's lead article discusses the common misconception of an opposition between basic and applied research. It also analyzes the State's role in funding the Brazilian Science & Technology system, offering insight into little-known data. The challenge is to balance expenditures in research between short-term and long-term outcomes. By respecting the rhythm of each type of research, as well as society's expectations, science can benefit current and future generations.

Brazil has had the opportunity to witness a rare moment in science: the birth of a new field of research. Cooperation between biologists and geologists who study the formations of the Amazon and the Atlantic forests has gone beyond multidisciplinary research. Researchers identified the need for more than sparse information on subjects outside of their areas of expertise. Only by diving into other areas of knowledge and working together from scratch, drawing up the initial research questions side by side, could geologists and biologists seek to achieve real breakthroughs. The integration of these two areas with the goal of studying forests gave birth to the field

of geogenomics, a term coined by geologist Paul Baker in 2014. The complexity of the Amazon and the Atlantic forests demands more than a single specialty. Comprehension of the biodiversity of great forest areas demands investigation of their plants, rivers, mountains and soil. Paleoclimatologists are using genomic data to test hypotheses formulated by geologists. Recent mineral dating has also contributed to understanding the evolution of flora and fauna. There are many examples of this. A collaboration between FAPESP's Biodiversity Program (Biota) and the NSF's Dimensions of Biodiversity program has given energy to this new field. Since 2012, both agencies have supported biodiversity research programs in which the congregation of large groups of researchers from different specialties has allowed for the analysis of huge quantities of data collected by the teams.

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Recent archaeological excavations still underway in Lapa do Santo, in the Lagoa Santa region in the State of Minas Gerais, offer a rich portrait of funerary rituals carried out by the peoples who lived there between 12,000 and 8,000 years ago. Once considered homogenous in terms of human occupation, this period is now divided into three distinct cultures. Each demonstrates complex burial patterns, with death-related rituals that followed precise rules. Lapa do Santo is one of the Lagoa Santa archaeological sites, which were discovered in the 19th century. The skull of Luzia, which is approximately 11,000 years old, was found in the 1970's and has allowed bioanthropologist Walter Neves to propose that the continent experienced two migratory waves. The current project is trying to shed light on the lifestyles of these peoples.