

Under the auspices of the United Nations Educational, Scientific and Cultural Organization (Unesco), the Latin American Center for Physics (CLAF) was created on March 26, 1962, through an agreement signed by representatives of 15 Latin American countries.

The creation of this new institution was a consequence of Resolution 2.121 of the Unesco General Conference of December 14, 1960, as well as Resolution 72 of its Executive Council of June 7, 1961, convinced that “the development of scientific research in the field of physics constitutes an indispensable foundation for economic and social progress.”

Since then, the main objective of CLAF has been to “promote and stimulate research and the training of physics researchers and university professors in Latin America,” according to the institution’s statutes.

THE CONTEXT

CLAF was created in a unique scientific and geopolitical scenario. Since the end of World War II, science (especially physics) had undergone a major transformation: the so-called Big Science.

Big Science had as its background the nationalization of science – particularly with the creation of large national laboratories, where thousands of researchers, engineers, and technicians worked; large direct government budgets; and centralized administration.

A new geopolitics was born in this period in which knowledge is synonymous with power (political, military, and economic), and organizations and scientific schools emerged in several countries as a result of a cooperative spirit among scientists.

Furthermore, the launch in 1957 of the artificial satellite Sputnik by the then Soviet Union triggered the so-called space race, with a notable expansion and promotion in several countries of research areas linked mainly to the exact sciences.

Finally, in the years of CLAF’s creation, physics was already experiencing the so-called ‘Age of Accelerators’: elementary particles began to be investigated with gigantic and complex machines, replacing the traditional area of cosmic rays – ultra-energetic space particles that incessantly bombard the Earth’s atmosphere.

Until then, research in cosmic radiation had largely driven the institutionalization (and, to a lesser extent, the integration) of physics in Latin America, with the work and results of, for example, César Lattes (1924-2005) in Brazil and Manuel Sandoval Vallarta (1899-1977) in Mexico.

These investigations, due to their experimental simplicity and possibility of obtaining unprecedented results, ‘spread’ to other countries in the region, such as Argentina, Bolivia, and Chile.

Director of CLAF (2025-2028) Ulisses Barres de Almeida (Brazil)

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CLAF

DIPLOMACY FOR SCIENCE, SCIENCE FOR DIPLOMACY



Centro Latinoamericano de Física
Centre Latino-Américain de Physique
Centro Latino-Americano de Física

The Latin American Center for Physics (CLAF) must regain the momentum that motivated its founders more than 60 years ago: to be a protagonist in confronting current and future challenges for the development of Latin American physics, acting as one of the main platforms for cooperation, integration, infrastructure, and human resource training for this science in the region – with a focus on countries where this discipline is less developed.

To this end, its institutional actions must be inspired by its founding ambition and go beyond the basic missions provided in its statutes: CLAF must play the role of an agent of scientific diplomacy, in close collaboration and dialogue with governments and scientific institutions not only in the region but also internationally (especially Unesco).

Main purpose of this scientific diplomacy: to ensure collaborations that translate into structural and lasting benefits for physics throughout Latin America and the Caribbean.

At this moment, CLAF, in an agreement signed with Brazil’s National Council for Scientific and Technological Development (CNPq), has resumed its traditional doctoral and postdoctoral fellowship program, aimed at Latin American students who want to come to Brazil and Brazilians who wish to study in countries in the region.

Another initiative that CLAF intends to promote: the return of the scientific meeting that is at the foundation of its creation, the Latin American School of Physics (ELAF).

In a few years, CLAF will have its historic headquarters restored and modernized. And thus, it will once again occupy rooms in the Mário de Almeida Pavilion, a building in Rio de Janeiro (RJ) that housed, in its early years, the Brazilian Center for Physical Research (CBPF).

We would thus like, through the actions currently underway, to rescue the foundations and reposition CLAF as a central institution for physics in Latin America, whose role and symbolism are intimately intertwined with the long (and sometimes difficult) historical development of physics in the region.

Ulisses Barres de Almeida
Director of CLAF
Researcher at CBPF

ORIGINS AND PIONEERS

In 1959, the 1st Latin American School of Physics (ELAF) was held in Mexico, with subsequent editions in Brazil (1960) and Argentina (1961). These meetings lasted between four and six weeks and also had the participation of European and North American physicists as instructors.

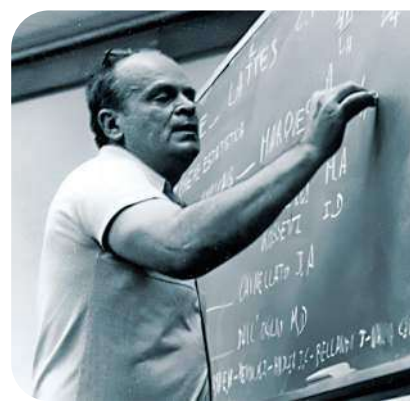
Encouraged by the success of these meetings – always independent of local governments and simulating previous experiences in Mexico, France, and Italy, for example –, Latin American physicists decided to create a Latin American Center for Physics. This initiative was notably led by Brazilian physicist José Leite Lopes (1918-2006), who had strong support from Mexican Marcos Moshinsky (1921-2009) and Argentinean Juan José Giambiagi (1924-1996).

Founded in 1945, Unesco established four years later its Office for Scientific Cooperation for Latin America in Montevideo. Already in the early 1950s, it had interacted with physics in Latin America: it promoted the so-called Unesco Mission, in which Brazilian and foreign physicists, engineers, and technicians took to the summit of Mount Chacaltaya a detector (cloud chamber) for the study of cosmic radiation and participated in an international physics congress in Rio de Janeiro and São Paulo.

The CLAF proposal was put into practice, to a large extent, through the efforts of Brazilian theoretical physicist and first director of CLAF, Gabriel E. A. Fialho (1920-1986), a former officer of the Brazilian Navy.

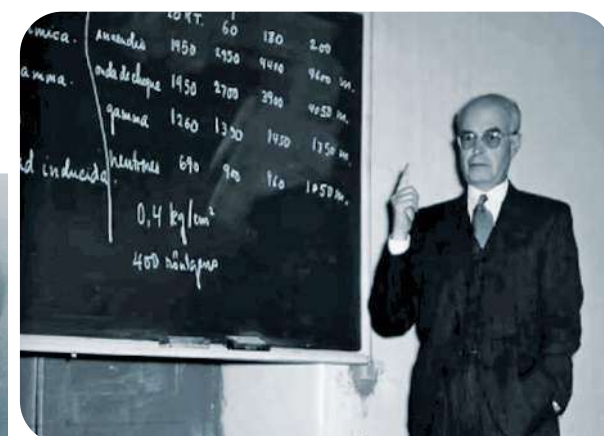
CLAF was born at a time when Latin American governments recognized the role of science (pure or applied) for economic development, but did not have the means to support it.

One of CLAF's main objectives was the integration and internationalization of physics in the region. To put this action into practice, it prioritized throughout the 1960s the training of human resources, sending young researchers to study abroad – this was possible thanks to a research fellowship program offered by the Brazilian government.



Brazilian physicist César Lattes and (top right) Mexican Manuel Sandoval Vallarta / Credit: Lattes Family / Government of Mexico

Participants of the Latin American School of Physics in Brazil in 1960 / Credit: CLAF



Among CLAF's founders, there was not only the will but also the need to rapidly modify the research environment in Latin America, aiming for participation (especially of physics) in regional development.

Over its more than 60 years of existence, CLAF has distributed hundreds of master and doctoral fellowships, established dozens of agreements, exchanges, international collaborations, and regional conferences.

CLAF was evaluated by Unesco in 1971, 1978, 1984, and 2000, based on commissions formed by renowned foreign researchers. In all of them, the conclusions were highly favorable to the institution's performance.

STRUCTURE

CLAF – whose members are currently 16 national states – has two administrative bodies: the General Assembly (GA) and the Governing Board (GB). The former is the institution's highest body and meets every two years. It is composed of representatives of the governments of member countries (each with the right to one vote) and a Unesco representative (without the right to vote).

The GB, elected by the GA, consists of three representatives for Mexico, Central America, and the Caribbean; three for Bolivia, Colombia, Ecuador, Peru, and Venezuela; four for Argentina, Brazil, Chile, Paraguay, and Uruguay – each representative has an alternate.

The GB also has an observer from Unesco and one from the Brazilian Center for Physical Research (CBPF), a research unit linked to Brazil's Ministry of Science, Technology, and Innovation (MCTI) and which, according to the CLAF Institution Agreement, houses its headquarters.

The GB meets annually to analyze and prepare the institution's work program and annual budget, whose guidelines are set every two years by the GA. It is up to the GB to choose the director of CLAF, who has a four-year term – to date, this position has always been occupied by a physicist, even though this is not required by the institution's statutes.

Currently, in addition to its director, CLAF has an academic secretary and an administrative secretary. All its administrative staff is provided by CBPF.

CLAF currently has five active thematic units: Astroparticles, History of Physics, Nanotechnology, Nuclear Fusion, Education and Outreach, as well as CLAF Central America – the latter focused on promoting specific actions in the region.

Funding for CLAF comes from the annual contributions of its member countries, as well as from national or international agreements established by the institution.



From top to bottom, José Leite Lopes, Marcos Moshinsky, and Juan José Giambiagi
Credit: CBPF/AFA



Mário de Almeida Pavilion, CLAF's historic headquarters; below, artistic conception of the renovation project
Credit: CBPF



FUTURE

In its more than six decades of existence, CLAF has maintained its main mission: to promote physics in Latin America and the Caribbean. Many countries in the region have achieved the much-desired autonomy and internationalization of this discipline – paradoxically, regional integration today is lower than 60 years ago.

But there is much to do. For this, CLAF has established an agenda for this decade:

Regional integration as a strategic priority: CLAF assumes the mission of strengthening the integration of physics research in Latin America, promoting coordinated multilateral actions that expand regional impact, according to the strategic priorities of member states.

Regional link between science and the state: with its unique intergovernmental nature and deep reach in the scientific community, CLAF must strengthen its role as a permanent space for dialogue among researchers, institutions, and governments, acting as an instrument of scientific diplomacy at the service of the region.

Permanent forums in strategic areas of physics: CLAF will promote the creation of stable regional groups and forums on strategic topics (such as high-energy physics and large scientific infrastructures), focusing on identifying concrete opportunities for joint actions.

Mobility, training, and Latin American talents: the resumption and expansion of regional fellowship and mobility programs, through agreements with regional agencies, is a central part of CLAF's actions, aiming to train highly qualified human resources and stimulate lasting networks of scientific collaboration on the continent.

International partnerships with regional impact: CLAF will continue to deepen strategic partnerships with major international scientific organizations – such as the European Organization for Nuclear Research (CERN) in Switzerland; the National Center for Scientific Research (CNRS) in France; and Unesco –, as well as with global forums of the scientific community – such as the International Union of Pure and Applied Physics (IUPAP) –, ensuring collaborations that translate into structural and lasting benefits for all of Latin America.

Building a Latin American physics: more than supporting isolated projects, CLAF's future lies in building the institutional foundations of a truly Latin American physics, integrated, cooperative, and capable of jointly responding to the great scientific and technological challenges of this century.

CLAF's role must go beyond physics: its mission, through scientific diplomacy, is to contribute to science being recognized as state policy in Latin America and the Caribbean, guided by Unesco's motto of "Building peace in the minds of men and women," a mission for which science is a fundamental instrument.